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The four 1967 institutes were coordinated through a consortium approach wherein the Center for Vocational and Technical Education, the Ohio State University served as the coordinating agency for designing the program, preparing staff, evaluating the program, writing the final report, disseminating information, and following up participants. The General Leadership Development Institutes held at Mississippi State University and Utah State University were designed to meet the needs of technical education personnel in relatively new positions. The State Staff Development Institutes held at the University of California at Los Angeles and The University of Connecticut were designed specifically to help experienced technical education personnel to better understand and fulfill their state leadership roles. Instructional materials for the institutes included the original Compilation of Technical Education Materials (VT 002 936) and the supplements (VT 002 930, VT 002 928) prepared for the 1966 institutes, and additional commissioned papers and materials. Recommendations indicate that the institutes planned and conducted on the consortium approach should be continued in 1968, the leadership and program development training in technical education supported by the federal funds and national advisory services should be continued, and that institutes should be planned and organized around fewer topics of most critical need. (HC)

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Project No. 7-0452
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THE CENTER FOR VOCATIONAL
AND TECHNICAL EDUCATION

The Ohio State University
Columbus, Ohio

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Aaron J. Miller,
Project Director

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INTRODUCTION

Need for the Project

State and local leadership development at all levels of technical education programming is essential to the sound and continuous growth of technical education in America. This leadership need has been clearly identified as a high priority by professional advisory groups and committees representing both state and local government and the profession in general.

The need for administrative leadership in technical education was further defined as the prime concern of administrative, supervisory, and teacher education representatives from 46 states represented at the five National Leadership Development Institutes in Technical Education held in 1966. Those in attendance indicated that a serious shortage of trained leadership personnel was probably the most critical factor impeding the growth and development of technical education in their state.

The National Program Development Institutes conducted during the summer of 1967 were a refined continuation of the 1966 summer technical education institutes. The 1967 institutes were designed to meet the demand to improve program development in technical education at both the state and local levels. Further, the institutes provided a mechanism for implementing positive program change through leadership development.

Purpose of the Project

The purpose of the project was to develop and improve the understanding of the philosophy of technical education and the specific leadership role and how it relates to program planning, implementation, evaluation and continued leadership training activities at the state and local levels through in-service training programs. The two specific groups served were: newly appointed administrators of technician training programs, and those with administrative responsibility for vocational areas which relate to technical education; and experienced state supervisory staff with a direct responsibility for administration of technical education programs or for training technical teachers.

Objectives

The specific objectives of the project were as follows:

A. To provide a vehicle for the development and improvement of present and prospective leaders, relatively inexperienced in the field of Technical Education, by developing their understanding of the administrative leadership role in Technical Education, and how this role relates to long range program planning development, program implementation and evaluation, philosophy, projections, innovations, and the relationships of Technical Education to other disciplines.

B. To provide a mechanism whereby existing and potential Technical Education leadership personnel at the state level, relatively experienced in the field of Technical Education, will develop and improve their understanding of the administrative role of state supervisory and teacher education staff and how these roles specifically relate to program planning and evaluation, and the planned development of Technical Education leadership potential within their state through in-service training.

C. To provide an exemplary in-service leadership development and training program that will serve as a model for the development and implementation of similar programs at both the state and local levels, and thus develop the Technical Education leadership potential within the individual states.

Project Organization

The National Program Development Institutes in Technical Education was a consortium of the following institutions: The University of California at Los Angeles, The University of Connecticut, Mississippi State University, Utah State University, and The Center for Vocational and Technical Education, The Ohio State University.

The Center served as the coordinating agency for designing the program, obtaining funds, preparing the core of institute staff, recommending consultants, collecting, preparing and disseminating instructional materials, recruiting and selecting participants, evaluation activities, and preparing the final report.

Each of the four cooperating institutions sponsored a two-week institute with a pre-established leadership training program for thirty to forty participants. These institutes and their locations were as follows:

1. Two General Leadership Development Institutes held at Mississippi State University and Utah State University were similar in scope, content, and objectives to the five National

Leadership Development Institutes in Technical Education conducted during 1966. The General Leadership Development Institutes were built around the successful content of the previous institutes, and a comprehensive evaluation of these efforts provided for the refinement of the prior program content to meet the needs of the neophyte and the potential administrator with Technical Education responsibility.

2. Two State Staff Development Institutes held at the University of California at Los Angeles and the University of Connecticut focused upon the specific Technical Education Leadership needs at the state level in the following ways:

A. by expanding and building upon previous institute training materials which were determined to have the most significant impact upon state staff development.

B. by providing an exemplary program of in-service staff development which may be taken back to the states by institute participants to be implemented with the necessary adaptions to meet the particular needs of the state.

METHOD

The Method section of this report presents a description of the activities which initiated the institutes. It then presents other project activities in a chronological order, ending with a description of the development of supplemental materials, which was the last project activity.

Meeting of Leadership Institutes' Materials Development and Resource Committee

On September 29, 1966, a meeting of the Materials Development and Resource Committee was held in Chicago for the purpose of suggesting and identifying instructional materials and training aids that would be suitable for future Technical Education Leadership Development Institutes, and to make recommendations for the curricula and operation of future institutes. The participants at this meeting are listed in Appendix A-1.

The meeting was successful in structuring guidelines for future technical education leadership training activities. The committee emphasized the need, not only for a general type of Technical Education Leadership Development Institute for those relatively new to positions involving responsibility for technical education, but also the critical need for an institute designed specifically to help the experienced technical education person with state-wide responsibility to better understand and fulfill his state leadership role.

Evaluation of 1966 Leadership Development Institutes

A meeting to review and interpret the evaluation of the 1966 institutes was held at The Center on October 10 and 11, 1966. The meeting was attended by the 1966 institute directors, the recorder-evaluators, a representative from the Division of Vocational and Technical Education, U. S. Office of Education, and The Center staff concerned with the project. The institute directors and recorder-evaluators reviewed the institute evaluation results which had been prepared by the project staff. As a result of this meeting, many suggestions were made which served as a useful guide in planning the 1967 Leadership Development Institutes.

A copy of the program for the evaluation meeting and a list of participants are included in Appendix A-2 and A-4 respectively.

1967 Institute's Planning Committee

A meeting of prospective institute directors (or their representatives) and Center personnel involved in the project met at The Center on October 13-14, 1966, to plan the 1967 institutes. This Committee also emphasized the need for two types of institutes -- a general type of technical eduction leadership development institute and also an institute geared to help the more experienced technical education staff person with state-wide responsibility.

It was this committee's efforts, along with the two committees previously described, that generated ideas and materials that substantially assisted The Center staff in the preparation of an operational plan for the 1967 institutes.

Instructional Materials

A compilation of instructional materials generated by the 1966 institutes was reproduced for use in the 1967 institutes. These materials consisted of the following: Supplement I, consisting of four commissioned papers, a technical education bibliography, and new and revised informational resources; and Supplement II, a compilation of presentations by outstanding educators and industrialists who served as consultants for the five institutes held in 1966. In addition, The Center commissioned for three papers to be written which made up the Compilation of Technical Education Instructional Materials for the 1967 institutes. This Compilation consisted of the following commissioned papers:

1. "Technician Need Surveys"
   Dr. Herbert Righthand

2. "A Design for the Dynamic Leadership of Vocational Education in the Decade Ahead" Richard S. Nelson

3. "Intermediate and Long-Range Program Planning in Vocational-Technical Education"
   Dr. Joseph T. Nerden

Other materials prepared and supplied to each institute are listed in Appendix B.

Institute Planning Meeting

The institute directors (or assistant directors) attended a planning meeting at The Center on February 10-11, 1967. Several operational facets of the institutes were discussed, including:

1. institute budgets.
2. consultants and resource personnel for the institutes.
3. academic credit for participants.
4. sources of institute curriculum materials.
5. identification of resources and consultants for curriculum materials development.
6. institute publicity, recruitment, etc.
7. possible instruments and methodology for final institute evaluation.

The meeting was successful in arriving at operational procedures and in pinpointing needed resources that would contribute to the success of the institutes.

Recruitment of Participants

The recruitment effort consisted primarily of the announcement of the program development institutes through contact by mail and selected media.

Materials prepared and used in contacting prospective participants and announcing the institutes via the U. S. mail service consisted of a brochure, an application form, and a recommendation sheet. These materials were prepared by The Center staff, reviewed by the institute directors, revised, and then duplicated.

The announcement package was mailed to state directors of vocational and technical education, head state supervisors and teacher educators for all vocational and technical education services, and members of the American Technical Education Association. Announcements were also sent to the Chief Administrative Officer of institutions listed in the Technical Education Yearbook, to the 1966 institute participants and to prospective participants who made inquiry by mail and telephone. Approximately 5,000 persons received the set of materials in the recruitment effort

Announcement of the institutes was also achieved through the following media:

- The U. S. Office of Education, Division of Vocational and Technical Education Circular Newsletter.
- The American Technical Education Association Newsletter.
- The American Vocational Journal.
- The Technical Education News.
- The School Shop Magazine.
- The Industrial Arts and Vocational Education Journal.
- The American Association of Junior Colleges Occupational Newsletter.

Members of the Division of Vocational and Technical Education Staff of the U. S. Office of Education and Regional Field Offices assisted the recruitment effort by announcing the institutes at various national conferences and regional meetings.

The recruitment effort resulted in 270 applications being sent to the Admissions Committee. While this response provided an adequate number for participant selection, the number did not meet full expectations.

Participant Selection

The Admissions Committee, consisting of institute directors and Center staff met at The Center on May 17-18, 1967, reviewed the applications, and selected the participants and alternates for the four institutes. Preference was given to individuals who demonstrated leadership qualities or leadership potential and who were in a position to both benefit from the institute and assist with similar leadership training activities in their own states.

Of the 270 applicants, 122 were selected as participants for the institutes. The original plans were to accommodate 160 participants (40 per institute), however, limited funds made it necessary to limit the number of paid participants to 116 (29 per institute). Because of problems unanticipated at the time of application, some applicants withdrew themselves as candidates and were replaced by alternates. No attempt was made to analyze the biographical data of the applicants who were not selected as participants. However, detailed treatment of the biographical data of applicants selected as participants is presented in the project evaluation part of this report under Description of Participants.

Development of Evaluation Procedures and Instruments

The process of developing evaluation procedures and instruments was guided primarily by the first two objectives stated in the contract:

1. To provide a vehicle for the development and improvement of present and prospective leaders, relatively inexperienced in the field of Technical Education, by developing their understanding of the administrative leadership role in Technical Education, and how this role relates to long range program planning and development, program implementation and evaluation, philosophy, projections, innovations, and the relationships of Technical Education to other disciplines.

2. To provide a mechanism whereby existing and potential Technical Education leadership personnel at the state

level relatively experienced in the field of Technical Education, will develop and improve their understanding of the administrative role of state supervisory staff and how this role specifically relates to program planning and evaluation, and the planned development of Technical Education leadership potential within their state through in-service training.

Proposed instruments and procedures for evaluation were prepared by Center staff members and were reviewed by the institute directors, associate directors, and consultants. The final forms were then printed and distributed to the institutes.

Description of the Evaluation Instruments

Instruments were developed in keeping with the first two objectives of the institutes previously mentioned and were designed to determine the participant's:

1. Gain in knowledge acquired from the institute.
2. Plans to utilize knowledge gained to affect positive program change.
3. Satisfaction with the content, presentation and operation of the institute.

In addition to the evaluation instruments, considerable personal data was obtained from the application forms including the name, age, address, present position, present duties and responsibilities of the applicant; professional and non-educational employment record; educational background; and long range goals of the applicant. This data provided an overview of the leadership potential in technical education, provided guidance for the institute directors on areas of content needing greatest stress, and provided guidelines for use in planning and evaluating future leadership training institutes.

The six instruments developed and used in the institutes are described below:

Participant's Self-Appraisal - State Staff Institutes.--The participant self-appraisal form for state staff institutes (Appendix C-1) was developed to be used as a pre-test and post-test evaluation instrument. This scale requested participants to assess their knowledge of selected topics at the beginning of the institutes and again at the end of the institutes. Each participant was asked to appraise his knowledge by using a five-point scale in which a rating of one meant that he did not feel knowledgeable concerning the topic and a rating of five meant that he felt highly knowledgeable concerning the topic. This instrument was developed to assess the gain in knowledge acquired by the participant from the institute.

Participant's Self-Appraisal - General Institutes.--The participant self-appraisal form for the general institutes (Appendix C-3) was similar in design and purpose to the participant self-appraisal form for the state staff institutes, except that more items were included in the instrument and the topic content of the items was somewhat different.

Participant's Present Program Activities.--Each participant was asked to complete this instrument (Appendix C-7) at the beginning of the institute. It was designed to determine the extent of the participants' involvement in a number of technical education activities. The instrument consisted of 20 items for which each participant indicated on a five-point scale the extent of present involvement. A rating of one meant that he was involved to a very low extent (or not at all) and a rating of five meant that he was involved to a very high extent.

Participant's Planned Program Activities.--This instrument (Appendix C-9) is the same in content and design as the one described above, and was administered at the end of the institutes. This time the participants were asked to indicate the extent they were planning to make any changes in their present program activities as a result of having attended the institute.

Evaluation of Presentations.--This instrument (Appendix C-11) was developed to assess the participants' evaluation of institute presentations on two occasions - on Friday of the first week and on Thursday of the second week. The participants were requested to evaluate six aspects of the presentation on a five-point scale (1 = poor, and 5 = excellent). The six aspects were quality of presentations, content of presentations, new concepts gained, quality of instructional materials, discussion opportunities, and variety of topics covered.

Participant's Professional Objectives.--This instrument (Appendix C-12) asked the participants to respond to a number of stated professional objectives by indicating whether they felt the objectives were either immediate (within the next two years) or long range objectives. Scores on this instrument were analyzed and interpreted as indicators of the success of the institutes. However, the data obtained will be used, primarily, in the follow-up of the participants to determine the extent to which they have reached their professional objectives.

Description of the Procedures for Evaluation

After the evaluation instruments had been developed, procedures for conducting the evaluation during the operation of the institutes were developed. These procedures may be examined in Appendix D.

Final Planning Meeting with Institute Directors

The final planning conference with the institute directors was held at Chicago on June 14, 1967. At this meeting, the instructional materials which had been prepared at The Center were presented for their review. The evaluation forms prepared by The Center staff were presented and critiqued. The group also reviewed the duties of the recorder-evaluators, and finalized the procedures for operating and evaluating the institutes.

Selection and Preparation of Recorder-Evaluators

The recorder-evaluators were graduate students selected by each institute director to assist with the administration of the institutes by recording activities and collecting data to be used in evaluating each institute and, subsequently, the total project. Each recorder-evaluator was provided with explicit instructions (Appendix D) prior to the institutes.

Operation of the Institutes

The General Leadership Development Institutes were conducted at the following universities on the indicated dates:

Mississippi State University, July 10-21, 1967
Utah State University, July 17-28, 1967

The State Staff Development Institutes were conducted at the following universities on the indicated dates:

University of California at Los Angeles, July 17-28, 1967
University of Connecticut, July 24 - August 4, 1967

The Instructional Programs.--The following major topics from the course outline (Appendix E-1) were covered at the General Leadership Development Institutes:

- The Leadership Role and Charge.
- The Rationale and Need for Technical Education.
- Description of the Technical Education Student.
- Administrative Structure of Technical Education Institutions.
- Program Patterns and Curriculum Development.
- Facilities and Equipment for Technical Education.
- Staffing Technical Education Programs.

- Financing Technical Education.
- Supervision and In-Service Teacher Education.
- Establishing Research and Development Needs.

The following major topics from the course outline (Appendix E-6) were covered at the State Staff Development Institutes:

- Leadership - The Role and Responsibility.
- Current Practices and Trends in Technical Education.
- Technician Need Surveys.
- State and Local Resources for Program Support.
- Coordinating Technician Training with Other Vocational Areas.
- Publicizing New Technical Programs.
- Intermediate and Long Range Program Planning.
- Staffing for Supervisory Positions.
- Evaluating Technical Education Programs, Staff and Facilities.
- Reporting Systems and Data Handling.
- Research Responsibility.

There was no prescribed order or method of presentation of the topics. This was determined by the individual institutes. Flexibility allowed maximum utilization of available speakers, consultants, resource persons, and for the scheduling of field trips. A detailed program for each institute is provided in Appendix F.

Methods and Techniques.--In most instances, formal presentations by selected specialists and consultants were followed by group discussion, small group work, and individual study. A field trip was conducted at each institute to a nearby technical education institution or industrial laboratory. Visual aids were used extensively in all institutes. The specialists and consultants were drawn from education, industry, and government.

Daily Schedule.--The length of training for each of the four institutes was scheduled over a two-week period, beginning at 9:00 a.m. on Monday of the first week and ending at noon on Friday of the second week. A typical daily schedule for participants was as follows:

7:00 a.m. - 9:00 a.m.	Breakfast, individual preparation, special interest group assignment activities.
9:00 a.m. - 10:30 a.m.	Lecture or formal presentation by resource person.
10:30 a.m. - 12:00 n.	Group discussion with resource person from previous session present.
12:00 n. - 1:00 p.m.	Lunch
1:00 p.m. - 3:00 p.m.	Group discussion led by institute director and usually with person or specialist other than morning speaker present.
3:00 p.m. - 4:30 p.m.	Special interest group activity period -- may involve group discussion, group effort or structuring a report, preparing an item of material to be added to institute resources, or preparing outlines for state in-service leadership training plans.
4:30 p.m. - 5:30 p.m.	Free time, group recreation, individual consultation with host institution staff specialists.
5:30 p.m. - 7:00 p.m.	Dinner.
7:00 p.m. - 9:00 p.m.	Library study, small group conferences with staff.

The field trip was scheduled for the entire day on the Saturday ending the first week of the institute.

Institute Staff.--In general, the institutes were staffed with a director or co-directors, assistant director, recorder-evaluator, selected consultants, and clerical personnel. A detailed staffing summary for the institutes is presented in Appendix G.

Attendence.--The institutes served 122 participants (114 men and 8 women) from 43 states, Puerto Rico, and Canada. The number of participants by institute was California, 29; Connecticut, 27; Mississippi, 34; and Utah, 32.

In all institutes, a certificate of attendance was given to each participant who completed the program. A detailed list of participants, by institute, is presented in Appendix H.

Evaluation.--The institute evaluation procedures (Appendix D-1) proved to be satisfactory to participants and institute directors and caused little confusion and/or delay in the operation of the institutes. Members of The Center project staff visited each of the institutes during their operation. This resulted in an exchange of information about the operation of the institutes and was valuable in total project evaluation.

Project Evaluation

The project evaluation was both objective and subjective in nature and was designed primarily to determine the participant's:

1. Gain in knowledge acquired from the institute.

2. Plans to utilize knowledge gained to affect positive program change.

3. Satisfaction with the content, presentation and operation of the institute.

Data used in evaluating the institutes were collected from the four participating institutes and were derived from the instruments below:

- The application form for participants.

- The participant's self-appraisal form for the state staff institutes as a pre-test and post-test (Appendix C-1).

- The participant's self-appraisal form for the general institutes as a pre-test and post-test (Appendix C-3).

- The participant's present program activities form (Appendix C-7).

- The participant's planned program activities form (Appendix C-9).

- Evaluation of presentations form (Appendix C-11).

- The participant's professional objectives form (Appendix C-12).

Electronic data processing equipment was used in the data reduction. The programs selected to process the data were determined by analyzing the previously stated objectives for the project evaluation. A description of electronic data processing programs and the procedures are presented in the following paragraphs.

Description of Participants.--The biographical data, which were collected on participants through the application form were analyzed to obtain a description of participants in terms of:

- Regional representation.
- State representation.
- Age grouping.
- Sex grouping.
- Institutional classification.
- Present position classification.
- Length of service in present position.
- Professional education work experience (years).
- Non-educational work experience classification.
- Non-educational work experience (years).
- Highest degree earned.
- Degree major area.
- Type of institute applied for.
- Participant's capability to be self-supporting.

Participant's Gain in Knowledge.--To obtain a measure of the participant's gain in knowledge, for each classification group in the Participant's Self-Appraisal (pre-test and post-test), a frequency count and a percentage response for each response level for each question was requested. A comparison of the responses of participants between the two test administrations (pre-test and post-test) to the same question was also obtained. The Ohio State Questionnaire Analysis was used and included:

- A comparison for each item on the questionnaire, the mean answer of both groups, and the difference of the means.
- The Kolmogorov-Smirnov Statistic.
- The Chi-square approximation and significance level for each item.

The following kinds of scores were obtained by processing data from the participant's self-appraisal instrument:

- Summary of the average pre-test scores for the state staff institutes.

- Summary of the average post-test scores for the state staff institutes.

- Participant's average gain score from pre-test to post-test for state staff institutes.

- Average percentage of gain by participants from pre-test to post-test for state staff institutes. (Percent gain = $\frac{\text{Post-Test-Pre-Test}}{\text{Pre-Test Score}}$)

- Average percentage of gain by participants from pre-test to post-test by present position classification for state staff institutes.

- Summary of the average pre-test scores for the general institutes.

- Summary of the average post-test scores for the general institutes.

- Participants' average gain score from pre-test to post-test for general institutes.

- Average percentage of gain by participants from pre-test to post-test for general institutes. (Percent gain = $\frac{\text{Post-Test-Pre-Test}}{\text{Pre-Test Score}}$)

- Average percentage of gain by participants from pre-test to post-test by present position classifications for general institutes.

The following kinds of scores were obtained by processing data from the participants' present and planned program activities instruments:

- Average absolute change score by item from pre-test to post-test (present to planned activities score) by institute.

- Average percentage of change by participants from pre-test to post-test (present to planned activities score) by institute. (Percent change = $\frac{\text{Post-Test-Pre-Test}}{\text{Pre-Test Score}}$)

- Average absolute change score per item by present position classification and by activity clusters.

- Average percentage of change by present position classification and by activity clusters.

To obtain other evaluation data, the following kinds of participants scores were summarized:

- Participant's evaluation of institute presentations - first week and second week.
- Participant's professional objectives by present position classification.

Review of Evaluation.--The project evaluation conference was held at The Center on October 12 and 13, 1967. The meeting was attended by the institute directors and The Center staff concerned with the project. The evaluation results were reviewed, which included all the findings of the data analysis previously described in this section of the report. Existing instructional materials were reviewed and evaluated and recommendations were made for the preparation of additional materials. Recommendations were also made for possible changes in the operation of future institutes. Facets of The Center's role as the coordinating institution for the consortium approach were also reviewed. A copy of the program for the evaluation meeting and a list of participants are included in Appendix I.

Preparation of Additional Instructional Materials

Through the experience of the institutes and the project evaluation meeting, the institute directors and Center staff identified instructional resources which were needed but not a part of existing materials.

The Project Evaluation Committee recommended that additional instructional materials be prepared and distributed to the institute participants and staff for use in conducting future state and locally sponsored leadership development institutes in technical education. In compliance with these suggestions, the following materials were compiled: (a) selected papers presented in the four institutes; (b) an ERIC package presentation including transparency masters and script; and (c) a compilation of facilities layouts for vocational and technical education.

RESULTS

The results of the project evaluation are presented in the following tables:

Description of Participants

Regional representation.--Table 1 indicates the distribution of participants who attended the four National Leadership Development Institutes in Technical Education and the total number of applicants by U.S.O.E. region. The attendance ranged from a high of 29 from Region V to a low of 6 from Regions I and VIII. The total number of applicants ranged from a high of 77 for Region V to a low of 12 for Region VIII.

TABLE 1

GEOGRAPHICAL DISTRIBUTION OF PARTICIPANTS AND APPLICANTS BY USOE REGIONS

Region	Number of Participants	Total Number of Applicants
I	6	13
II	7	18
III	17	28
IV	11	23
V	29	77
VI	15	33
VII	12	25
VIII	6	12
IX	17	35
Total	* 120	** 264

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* In addition, there were 2 non-paid observers from Canada, making a total of 122 participants.

** There were 6 applicants outside of USOE Regions, making a total of 270 applicants.

State representation at all four institutes.--Table 2 shows the distribution of participants who attended the four institutes by state and territory. An examination of geographic mix of participants indicates that 43 states, Puerto Rico and Canada were represented. The 7 states not represented were Alaska, Hawaii, Maryland, New Hampshire, South Dakota, Vermont, and Wyoming. The number of participants by state ranged from a high of 9 for Michigan to a low of 1 for Delaware, Georgia, Idaho, Louisiana, Maine, Massachusetts, Mississippi, Montana, New Jersey North Dakota, Puerto Rico, Rhode Island, and Utah.

TABLE 2

GEOGRAPHICAL DISTRIBUTION OF ALL PARTICIPANTS BY STATE

State	Number of Participants	State	Number of Participants
Alabama	2	Nebraska	2
Arizona	4	Nevada	2
Arkansas	2	New Jersey	1
California	4	New Mexico	2
Canada	2	New York	3
Colorado	3	North Carolina	5
Connecticut	3	North Dakota	1
Delaware	1	Ohio	4
Florida	3	Oklahoma	3
Georgia	1	Oregon	3
Idaho	1	Pennsylvania	2
Illinois	4	Puerto Rico	1
Indiana	4	Rhode Island	1
Iowa	2	South Carolina	3
Kansas	3	Tennessee	2
Kentucky	3	Texas	3
Louisiana	1	Utah	1
Maine	1	Virginia	6
Massachusetts	1	Washington	4
Michigan	9	West Virginia	2
Minnesota	3	Wisconsin	8
Mississippi	1		
Missouri	4	Total	122
Montana	1		

States not represented: Alaska, Hawaii, Maryland, New Hampshire, South Dakota, Vermont, Wyoming, and the District of Columbia.

State representation at general institutes.--The number of participants by state who attended the two general institutes at Utah and Mississippi is shown in Table 3. A total of 66 participants representing 35 states and Canada attended these two institutes. Michigan had the highest representation with 5, while a number of states had only 1 participant.

TABLE 3

GEOGRAPHICAL DISTRIBUTION OF GENERAL INSTITUTE PARTICIPANTS BY STATE

State	Number of Participants	State	Number of Participants
Alabama	2	Montana	1
Arizona	2	Nebraska	2
Arkansas	2	New Jersey	1
California	2	New York	1
Canada	1	North Carolina	2
Colorado	2	North Dakota	1
Connecticut	1	Ohio	3
Illinois	3	Oklahoma	2
Indiana	2	Oregon	1
Iowa	1	Pennsylvania	2
Kansas	2	South Carolina	3
Kentucky	2	Tennessee	2
Maine	1	Texas	3
Massachusetts	1	Utah	1
Michigan	5	Virginia	2
Minnesota	1	Washington	2
Mississippi	1	West Virginia	1
Missouri	3	Wisconsin	2
		Total	66

State representation at state staff institutes.--The number of participants by state who attended the two state staff institutes at California and Connecticut is indicated in Table 4. A total of 56 participants from 29 states, Puerto Rico and Canada attended these two institutes. The state with the largest representation was Wisconsin with 6, while a number of states were represented by only 1 participant.

TABLE 4

GEOGRAPHICAL DISTRIBUTION OF STATE STAFF INSTITUTE PARTICIPANTS BY STATE

State	Number of Participants	State	Number of Participants
Arizona	2	Michigan	4
California	2	Minnesota	2
Canada	1	Missouri	1
Colorado	1	Nevada	2
Connecticut	2	New Mexico	2
Delaware	1	New York	2
Florida	3	North Carolina	3
Georgia	1	Ohio	1
Idaho	1	Oklahoma	1
Illinois	1	Oregon	2
Indiana	2	Puerto Rico	1
Iowa	1	Rhode Island	1
Kansas	1	Virginia	4
Kentucky	1	Washington	2
Louisiana	1	West Virginia	1
		Wisconsin	6
		Total	56

Age grouping.--Table 5 presents a summary of the age grouping of the participants. The greatest representation (30) was in the two age groups 40-44 and 45-49. The lowest representation (3) was in the youngest category, 25 to 29. One participant failed to report his age.

TABLE 5

DISTRIBUTION OF PARTICIPANTS BY AGE

Participant Age Grouping	Participants Number	Participants Percent
55 and over	17	14.0
50 - 54	11	9.1
45 - 49	30	24.8
40 - 44	30	24.8
35 - 39	18	14.9
30 - 34	12	9.9
25 - 29	3	2.5
Total	121	

Sex classification.--Table 6 reveals that of the 122 participants, 114 were male and 8 were female.

TABLE 6

DISTRIBUTION OF PARTICIPANTS BY SEX

Sex	Participants Number	Participants Percent
Male	114	94.4
Female	8	5.6
Total	122	

Institutional classification.--The number of participants associated with different types of institutions is presented in Table 7. Twenty-one participants were from universities or colleges, 26 were from community of junior colleges, 23 were from technical institutes, 8 were from area vocational-technical schools, 6 were from technical high schools, 9 were from comprehensive high schools, and 28 were from other types of institutions not classified above (state departments of education, etc.). Institutional classification data was not available for 1 participant.

TABLE 7

DISTRIBUTION OF PARTICIPANTS BY INSTITUTIONAL CLASSIFICATION

Institution Classification	Participants Number	Participants Percent
University or College	21	17.4
Community or Junior College	26	21.4
Technical Institute	23	19.0
Area Vocational-Technical School	8	6.7
Technical High School	6	5.0
High School Comprehensive	9	7.4
Other	28	23.1
Total	121	

Present position classification.--Table 8 reveals that of the 122 participants, 52 were in state or local administration, 24 were in state or local supervision, 21 were in instruction, 2 were in curriculum, 6 were in teacher education, and 17 were not classified under any of these headings.

TABLE 8

DISTRIBUTION OF PARTICIPANTS BY POSITION CLASSIFICATION

Position Classification	Participants	
	Number	Percent
Administration		
State	3	2.5
Local	49	40.1
Supervision		
State	18	14.8
Local	6	4.9
Instruction		
Department Head	15	12.3
Instructor	6	4.9
Curriculum	2	1.6
Teacher Education	6	4.9
Other	17	14.0
Total	122	

Length of service in present position.--Table 9 indicates the number of years each participant had served in his present position. Of the 89 participants from which this data was collected, 58 were in the 1-3 year category, 19 were in the 4-7 year category, 4 were in the 8-11 year category, 3 were in the 12-15 year category, and 5 were in the 16 and over category. Thirty-three participants did not provide this information on their application forms.

TABLE 9

DISTRIBUTION OF PARTICIPANTS BY LENGTH OF SERVICE IN PRESENT POSITION

Years of Service in Present Position	Participants	
	Number	Percent
1 - 3	58	65.2
4 - 7	19	21.4
8 - 11	4	4.5
12 - 15	3	3.4
16 and over	5	5.5
Total	89	

Professional education work experience in years.--Table 10 indicates that of the 117 participants, 10 were in the 1-5 year range, 32 were in the 6-10 year range, 22 were in the 11-15 year range, 35 were in the 16-20 year range, and 18 were in the 21 and over range. Five participants did not provide professional education work experience data in their applications.

TABLE 10

DISTRIBUTION OF PARTICIPANTS BY PROFESSIONAL WORK EXPERIENCE IN YEARS

Years of Professional Education Work Experience	Participants Number	Participants Percent
1 - 5	10	8.5
6 - 10	32	27.4
11 - 15	22	18.8
16 - 20	35	29.9
21 and over	18	15.4
Total	117	

Non-educational work experience classification.--The categories of the participants non-educational work experience are shown in Table 11. Of the 112 participants who revealed this information, 49 had experience in industry, 8 in business, 4 in distributive occupations, 3 in health, 13 in technical occupations, 15 in engineering and/or scientific job classifications, and 20 indicated some area other than those above. Ten participants did not provide this data in their applications.

TABLE 11

DISTRIBUTION OF PARTICIPANTS BY NON-EDUCATIONAL WORK EXPERIENCE CLASSIFICATION

Non-Educational Work Experience Classification	Participants Number	Participants Percent
Industrial	49	43.8
Business	8	7.1
Distributive	4	3.6
Health	3	2.7
Technical	13	11.6
Engineering and Scientific	15	13.4
Other	20	17.8
Total	112	

Non-educational work experience in years.--Table 12 shows that the participants' non-educational work experience in years was broken into 5 major categories. A total of 111 participants were' included in the analysis; 16 were in the 1-3 year category, 41 were in the 4-7 year category, 23 were in the 8-11 year category, 20 were in the 12-15 year category, and 16 were in the 16 and over category. Eleven applicants did not provide non-educational work experience data in their applications.

TABLE 12

DISTRIBUTION OF PARTICIPANTS BY NON-EDUCATIONAL WORK EXPERIENCE IN YEARS - (LAST 4 JOBS)

Years of Non-Educational Work Experience - Last 4 Jobs	Participants Number	Participants Percent
1 - 3	16	14.4
4 - 7	41	36.9
8 - 11	23	20.7
12 - 15	20	18.0
16 and over	11	10.0
Total	111	

Highest degree earned.--Table 13 reveals that of the 120 participants for which data were collected, 9 held the Ph.D. or Ed.D., 90 held a master's degree, and 21 held a bachelor's degree. Degree data were not available on 2 application forms.

TABLE 13

DISTRIBUTION OF PARTICIPANTS BY HIGHEST DEGREE EARNED

Highest Degree Earned	Participants Number	Participants Percent
Ph.D. or Ed.D.	9	7.5
Master's	90	75.0
B.S. or B.A.	21	17.5
Total	120	

Associate degree major area.--Table 14 reveals that 8 of the participants indicated their associate degree major area. Of these, 1 was in agriculture, 2 in engineering, 2 in technical, 1 in trade and industrial, and 2 in some area other than those above. The remaining 114 participants either did not receive the associate degree, or did not provide this data in their applications.

TABLE 14

DISTRIBUTION OF PARTICIPANTS BY ASSOCIATE DEGREE MAJOR AREA

Associate Degree Major Area	Participants Number	Percent
Agriculture	1	12.5
Engineering	2	25.0
Technical	2	25.0
Trade and Industrial	1	12.5
Other	2	25.0
Total	8	

B.S. or B.A. degree major area.--Table 15 shows a breakdown of the participants' B.S. or B.A. degree major area. Of the 121 participants who revealed this information, 6 received their B.S. or B.A. in agriculture, 11 in business, 1 in distributive, 4 in health, 12 in math-science, 13 in industrial arts, 4 in technical, 31 in trade and industrial, and 39 received their degree in some area other than those above. This data was not available for 1 participant.

TABLE 15

DISTRIBUTION OF PARTICIPANTS BY B.S. OR B.A. DEGREE MAJOR AREA

B.S. or B.A. Degree Major Area	Participants Number	Percent
Agriculture	6	5.0
Business	11	9.1
Distributive	1	.8
Health	4	3.3
Math-Science	12	9.9
Industrial Arts	13	10.8
Technical	4	3.3
Trade and Industrial	31	25.6
Other	39	32.2
Total	121	

Master's degree major area.--Table 16 indicates the master's degree major area of 100 participants: 13 received their master's degree in administration, 5 in business, 22 in trade and industrial, 10 in engineering, 5 in math-science, 5 in technical, 13 in vocational, and 27 in an area other than those indicated above.

TABLE 16

DISTRIBUTION OF PARTICIPANTS BY MASTER'S DEGREE MAJOR AREA

Master's Degree Major Area	Participants Number	Participants Percent
Administration	13	13.0
Business	5	5.0
Industrial Education (T & I)	22	22.0
Engineering	10	10.0
Math-Science	5	5.0
Technical	5	5.0
Vocational	13	13.0
Other	27	27.0
Total	100	

Ph.D. or Ed.D. major area.--Table 17 reveals the Ph.D. or Ed.D. major area of the 9 participants who held this degree. Four received their degree in administration, 1 in trade and industrial, 1 in technical, 2 in vocational, and 1 in some other category.

TABLE 17

DISTRIBUTION OF PARTICIPANTS BY Ph.D. OR Ed.D. MAJOR AREA

Ph.D. or Ed.D. Major Area	Participants Number	Participants Percent
Administration	4	44.5
Industrial Education (T & I)	1	11.1
Technical	1	11.1
Vocational	2	22.2
Other	1	11.1
Total	9	

Type of institute applied for.--The type of institute that the participants applied for is shown in Table 18. Sixty-two participants applied for a general institute, 43 applied for a state staff institute, and the remainder (17) applied for either a general institute or a state staff institute.

TABLE 18

DISTRIBUTION OF PARTICIPANTS BY TYPE OF INSTITUTE APPLIED FOR

Type of Institute Applied for	Participants Number	Participants Percent
General	62	50.8
State Staff	43	35.3
Either	17	13.9
Total	122	

Participants' Gain in Knowledge

The results of the analysis of data on several facets of the participants' gain in knowledge are presented in the following tables:

Summary of the average pre-test raw score (participant's self-appraisal) for state staff institutes.--Table 19 indicates that the average pre-test raw score (participant's self appraisal) for the state staff institutes was 74.14. The possible raw score range was from 25 to 125. The average pre-test scores by institute were: California--77.17 and Connecticut--71.11.

TABLE 19

SUMMARY OF AVERAGE PRE-TEST SCORES (PARTICIPANT'S SELF APPRAISAL) FOR STATE STAFF INSTITUTES

Average Pre-Test Score for State Staff Institutes	Average Pre-Test Score by Institute California	Connecticut
74.14	77.17	71.11

Summary of the average post-test raw score for state staff institutes.--Table 20 indicates that the average post-test raw score (participant's self-appraisal) for the state staff institutes was 85.56. The possible raw score range was from 25 to 125. The scores by institute were: California--85.31 and Connecticut--85.81

TABLE 20

SUMMARY OF AVERAGE POST-TEST SCORES
FOR STATE STAFF INSTITUTES

Average Post-Test Score for State Institutes	Average Post-Test Score by Institute California	Connecticut
85.56	85.31	85.81

Participants' average gain in raw score from pre-test to post-test for state staff institutes.--Table 21 indicates that the average gain in raw score (participant's self-appraisal) from the pre-test to the post-test for the state staff institutes was 11.42. The average gain scores by institute were: California--8.14 and Connecticut--14.70.

TABLE 21

GAIN SCORE AVERAGE FROM PRE-TEST
TO POST-TEST FOR STATE STAFF INSTITUTES

Gain Score Average for State Institutes	Gain Score Average by Institute California	Connecticut
11.42	8.14	14.70

Average percentage of gain by participants from pre-test to post-test for state staff institutes.--Table 22 indicates that the average percentage of gain by participants for the state staff institutes was 15.22 percent. The average percent of gain from the pre-test to post-test (participant's self-appraisal) was 10.55 percent for California and 20.68 percent for Connecticut.

TABLE 22

AVERAGE PERCENT OF GAIN BY PARTICIPANTS
FROM PRE-TEST TO POST-TEST FOR STATE STAFF INSTITUTES

Average Percent of Gain for State Institutes	Average Percent Gain by Institute California	Connecticut
15.22	10.55	20.68

Average percentage of gain by participants from pre-test to post-test by present position classification for state staff institutes.--Table 23 reveals the average percent gain from the pre-test to post-test for the state staff institute participants by their present position classification. The average percent of gain by position classification was: department heads or chairmen -- 18.15 percent; teacher educators -- 29.95 percent; local directors -- 16.06 percent; local supervisors -- 5.71 percent; state supervisors -- 13.36 percent; administrators in post high schools -- 13.92 percent; and those in positions classified as "other" -- 10.70 percent.

TABLE 23

AVERAGE PERCENT OF GAIN BY PARTICIPANTS FROM PRE-TEST TO POST-TEST BY PRESENT POSITION CLASSIFICATION FOR STATE STAFF INSTITUTES

Position Classification	No. of Participants	Average Percent Gain for State Staff Institutes
Teacher	0	-
Dept. Head or Chairman	9	18.15
Teacher Educator	6	29.95
Local Director	9	16.06
Local Supervisor	2	5.71
State Supervisor	21	13.36
Administrator in Post-High School	5	13.92
Other	4	10.70

Summary of the average pre-test raw score (participant's self-appraisal) for general institutes.--Table 24 indicates that the average pre-test raw score (participant's self-appraisal) for the general institutes was 137.41. The possible raw score range was from 50 to 250. The average pre-test scores by institute were 135.53 for Mississippi and 139.28 for Utah.

TABLE 24

SUMMARY OF AVERAGE PRE-TEST SCORES (PARTICIPANTS SELF-APPRAISAL) FOR GENERAL INSTITUTES

Average Pre-Test Score for General Institutes	Average Pre-Test Score by Institute Mississippi	Utah
137.41	135.53	139.28

Summary of the average post-test raw score for general institutes.--Table 25 indicates that the average post-test raw score (participant's self-appraisal) for the general institutes was 183.86. The possible raw score range was from 50 to 250. The average post-test scores by institute were 186.06 for Mississippi and 181.66 for Utah.

TABLE 25

SUMMARY OF AVERAGE POST-TEST SCORES
(PARTICIPANTS SELF-APPRAISAL) FOR GENERAL INSTITUTES

Average Post-Test Score for General Institutes	Average Post-Test Score by Institute	
	Mississippi	Utah
183.86	186.06	181.66

Participant's average gain in raw score from pre-test to post-test for general institutes.--Table 26 indicates that the average gain in raw score (participant's self-appraisal) from the pre-test to the post-test for the general institutes was 46.45. Mississippi had a gain score average of 50.53 and Utah had a gain score average of 42.37.

TABLE 26

GAIN SCORE AVERAGE FROM PRE-TEST
TO POST-TEST FOR GENERAL INSTITUTES

Gain Score Average for General Institutes	Gain Score Average by Institute	
	Mississippi	Utah
46.45	50.53	42.37

Average percentage of gain by participants from pre-test to post-test for general institutes.--Table 27 indicates that the average percentage of gain by participants for the general institutes was 33.81 percent. The average percent of gain from the pre-test to post-test was 37.28 percent for Mississippi and 30.42 percent for Utah.

TABLE 27

AVERAGE PERCENT OF GAIN BY PARTICIPANTS
FROM PRE-TEST TO POST-TEST FOR GENERAL INSTITUTES

Average Percent of Gain for General Institutes	Average Percent Gain by Institute	
	Mississippi	Utah
33.81	37.28	30.42

Average percentage of gain by participants from pre-test to post-test by present position classification for general institutes.--Table 28 reveals the average percent gain from the pre-test to post-test for the general institute participants by their present position classification. The average percent of gain by position classification was: teachers -- 31.67 percent; department heads or chairmen -- 20.53 percent; teacher educators -- 30.53 percent; local directors -- 40.98 percent; local supervisors -- 49.11 percent; state supervisors -- 26.34 percent; administrators in post-high schools -- 33.31 percent; and those in positions classified as "other" -- 31.56 percent.

TABLE 28

AVERAGE PERCENT OF GAIN BY PARTICIPANTS FROM PRE-TEST TO POST-TEST BY PRESENT POSITION CLASSIFICATION FOR GENERAL INSTITUTES

Position Classification	No. of Participants	Average Percent Gain for General Institutes
Teacher	4	31.67
Dept. Head or Chairman	6	20.53
Teacher Educator	5	30.53
Local Director	15	40.98
Local Supervisor	4	49.11
State Supervisor	3	26.34
Administrator in Post High School	18	33.31
Other	9	31.56

Participant's Present and Planned Activities

All participants completed an instrument on the first day of the institutes which indicated the extent of their involvement in a number of technical education activities. The instrument consisted of 20 items for which the participants indicated on a 5-point scale the extent of present involvement (1 = very low extent or not at all, 2 = low extent, 3 = average extent, 4 = high extent and 5 = very high extent).

The same instrument was administered at the end of the institutes, except this time the participants indicated the extent they were planning to make any changes in their present program activities as a result of having attended the institute.

Since any change from present to planned program activities was assumed to be positive, the data were analyzed in terms of absolute change.

The following tables present the results of the analysis of data:

Average absolute change score by item from pre-test to post-test (present to planned activities score) by institute.--Table 29 indicates the average absolute change score (1-5 scale) for each item from the pre-test to post-test (present to planned activities score) by institute. The average change score by item by institute was: California -- 1.04; Connecticut -- 1.22; Mississippi -- 1.05; and Utah 1.09.

TABLE 29

AVERAGE ABSOLUTE CHANGE SCORE
BY ITEM FROM PRE-TEST TO POST-TEST
(PRESENT TO PLANNED ACTIVITIES SCORE)
BY INSTITUTE

Institute	Average Absolute Raw Change Score by Item
California	1.04
Connecticut	1.22
Mississippi	1.05
Utah	1.09

Average percentage of change by participants from pre-test to post-test (present to planned activities score) by institute.--Table 30 indicates the average percentage of change by participants from the pre-test to post-test (present to planned activities score) by institute. The average percent change by institute was 34.98 percent for California, 42.23 percent for Connecticut, 37.90 percent for Mississippi and 38.23 percent for Utah.

TABLE 30

AVERAGE PERCENT OF CHANGE BY PARTICIPANTS
FROM PRE-TEST TO POST-TEST (PRESENT TO
PLANNED ACTIVITIES SCORE) BY INSTITUTE

Institute	Average Percent of Change
California	34.98
Connecticut	42.23
Mississippi	37.90
Utah	38.23

Participants' Evaluation of Institute Presentations

The institute participants evaluated the institute presentations on two occasions -- on Friday of the first week and on Thursday of the second week. Six aspects of the presentations were evaluated on a 5-point scale (1 = poor, and 5 = excellent). The six aspects were (1) quality of presentations, (2) content of presentations, (3) new concepts gained, (4) quality of instructional materials, (5) discussion opportunities, and (6) variety of topics covered.

The following tables present a summary of the participants' evaluation of presentations:

Summary of the average first week evaluation scores.--Table 31 indicates that the average first week evaluation score for all institutes was 23.31. The possible range was from 6 to 30 (6 = poor and 30 = excellent). The average first week evaluation scores by institute were: California -- 21.86; Connecticut -- 25.48; Mississippi -- 24.16; and Utah -- 21.75.

TABLE 31

SUMMARY OF AVERAGE 1ST WEEK EVALUATION SCORES

Average 1st Week Evaluation Score for all Institutes	Average 1st Week Evaluation Score by Institute			
	Calif.	Conn.	Miss.	Utah
23.31	21.86	25.48	24.16	21.75

Summary of the average second week evaluation scores.--Table 32 indicates that the average second week evaluation score for all institutes was 24.27. The possible range was from 6 to 30 (6 = poor, and 30 = excellent). The average second week evaluation score was 21.55 for California, 25.52 for Connecticut, 26.56 for Mississippi and 23.44 for Utah.

TABLE 32

SUMMARY OF AVERAGE 2ND WEEK EVALUATION SCORES

Average 2nd Week Evaluation Score for all Institutes	Average 2nd Week Evaluation Score by Institute			
	Calif.	Conn.	Miss.	Utah
24.27	21.55	25.52	26.56	23.44

Summary of the average first week and second week evaluation scores.--Table 33 indicates that the average first week and second week evaluation score for all institutes was 23.79. The possible range was from 6 to 30 (6 = poor, and 30 = excellent). The average first week and second week evaluation scores by institute were: California -- 21.71; Connecticut -- 25.50; Mississippi -- 25.36; and Utah -- 22.60.

TABLE 33

SUMMARY OF AVERAGE 1ST WEEK AND 2ND WEEK EVALUATION SCORES

Average 1st Week and 2nd Week Evaluation Score for all Institutes	Average 1st Week and 2nd Week Evaluation Score by Institute			
	Calif.	Conn.	Miss.	Utah
23.79	21.71	25.50	25.36	22.60

Review of Evaluation

The members of the project evaluation committee discussed all aspects of the previously mentioned evaluation results as well as other factors such as the consortium approach and the coordination of the project. The institute directors were pleased with the growth on the part of the participants in terms of their gain in technical education knowledge. The evidence also indicated that the participants planned to make numerous changes in their programs as a result of having attended the institutes, and that the participants were satisfied with the institute presentations.

The institute directors complimented the consortium approach and recommended continuation of this technique for conducting program development training institutes in technical education. The Center staff and the institute directors reviewed and evaluated existing instructional materials and recommended the preparation of additional instructional materials to be supplied to the institute participants and staff for use in conducting future state and locally sponsored leadership training programs in technical education.

The following recommendations were also made for consideration in planning and conducting future institutes:

- The geographical location of future institutes should provide optimum transportation accessibility.
- The institute program should be planned and organized around fewer topics so that the most critical needs of participants can be explored in depth.
- Attempts should be made to employ outstanding consultants for longer periods of time to provide for better coordination and to insure greater in-depth treatment of institute topics.
- Participants should be reimbursed for travel and subsistence.
- Overhead money should be provided to the sponsoring institutions to encourage greater participation by leading centers of learning currently hampered by the present regulations.
- The institute directors recommended that The Center develop plans to conduct leadership development institutes in 1968.

DISCUSSION

Interpretation of the results for each part of the evaluation have been presented in the Discussion section in the same order that they appeared in the Results section of this report.

Description of Participant

Representation by U. S. Office of Education Regions.--The selection process resulted in an equitable distribution of participants and alternates among the U. S. Office of Education Regions. The number of participants from Regions I, II, and VIII was somewhat lower than the number from other regions; however, the lack of extensive technical education programs in these regions may account for the low attendance from these states. Overall, the institute directors and The Center staff were pleased with the regional distribution of participants attending the institutes.

Representation by state.--The attempt to obtain a geographic mix of participants was successful. An insufficient number of applicants from several states, however, resulted in seven states not being represented, and 13 states having only one participant. Several factors are likely to be responsible for the poor attendance from these states. Many of the states have a limited population and their technical education programs are in the developmental stages. Some states probably had limited participation because of the time of year the institutes were conducted. It is also probable that many technical educators had already committed themselves to other special professional activities prior to the announcement of the institutes. Other institutes that provide full travel and subsistence could have influenced potential applicants.

Age grouping.--Almost one-half of the participants were in the 40-49 age range, which is an indication of the average age of many technical education leaders. However, the age of the participant was not a critical factor in selecting qualified leaders or potential leaders for attendance at the institutes.

Sex classification.--Because of the lack of women applicants, only eight of the 122 participants were female. However, applications from qualified female administrators, state and local supervisors, teacher educators, and other female leadership personnel were actively solicited during the application period.

Institutional classification.--The greatest representation to the institutes was from the post-high school institutions. This might be explained by the fact that most technical education is offered in institutions at the post-high school level. Future institutes may have an increase in participants from high schools as more technical programs are developed at that level.

Present position classification.--The participants' application forms revealed that the greatest number of participants (75) were employed in administrative or supervisory positions at the state or local level. Other areas were adequately represented with the exception of curriculum personnel.

Length of service in present position.--Almost one-half (58) of the participants had only served from one to three years in their present position, and 19 more had spent only 4-7 years in their present position. This is an indication of the newness of many technical education programs, and the mobility of technical education administrators.

Professional education work experience in years.--The participant's professional education work experience represented the number of years in their last four positions. This included teaching, supervisory, administrative, teacher education, and curriculum development experience. The larger groups were those in the 6-10, 11-15, and 16-20 years of experience categories. This might be explained by the fact that present day administrators normally come from the ranks of the profession, and therefore have appropriate previous professional backgrounds.

Non-educational work experience classification.--The greatest representation of non-educational work experience (49) was from industry. This can best be explained by the certification requirement for most teaching and administrative jobs in technical education which require appropriate occupational experience, and the fact that most existing technical education programs are industrial oriented.

Non-educational work experience in years.--The greater number of participants (41) had from 4-7 years of work experience which may again be explained by the fact that most technical education administrators must meet state certification requirements. In general, these requirements stipulate a minimum of at least five years of work experience. It is significant to note, however, that 16 of the participants had only 1-3 years of non-educational work experience. This can be explained in part by the fact that many of the participants came to the institute from community or junior colleges which have varied requirements for certification. In fact, some states have no rigid certification requirements for professional personnel employed in these community or junior colleges.

Highest degree earned.--A majority of the participants (90) held the master's degree. This could be explained by the fact that certification requirements for most administrative positions require the completion of the master's degree.

Associate degree major area.--There were eight participants who indicated their associate degree major area. The areas represented included agriculture, engineering, technical, trade and industrial and "other". It may be that other participants had received an associate degree, but did not report this information on their application forms.

B.S. or B.A. degree major area.--The data revealed a wide variety in the B.S. or B.A. degree major areas of the participants. The most representative area was Trade and Industrial Education.

Master's degree major area.--A great variety of degree major areas existed among the 100 participants who held the master's degree. Trade and Industrial Education was well represented, as were the areas of Educational Administration, Vocational Education and Engineering.

Ph.D. or Ed.D. major area.--Of the nine participants with the doctorate degree, four had received the degree in Administration. Other areas represented were Trade and Industrial Education, Technical Education, Vocational Education and the area classified as "other".

Type of institute applied for.--About one-half (62) of the participants applied for a general institute, while 43 applied for a state staff institute and 17 indicated they would attend either type. This information was helpful in the selection process.

Participants' Gain in Knowledge

The interpretation of the participants' gain in knowledge is treated in the following paragraphs:

Summary of the average pre-test raw score (participant's self-appraisal) for state staff institutes.--The average pre-test score (participant's self appraisal), for the state staff institutes was 74.14. These pre-test scores are directly related to the knowledge the participants brought with them. The institute having the lowest average pre-test score had the greatest overall average percentage of gain.

Summary of the average post-test raw score for state staff institutes.--Although the participants (and hence the institutes) pre-test scores varied widely, the average post-test score (participant's self-appraisal) for the two state staff institutes was very similar. This would indicate that, regardless of the diversity of background and level of the participants, the institutes were uniformly effective in raising the level of the participants to some similar degree of understanding.

Participants average gain in raw score from pre-test to post-test for state staff institutes.--The average gain score indicates that the participants in each institute experienced a gain in knowledge. It is assumed that the gain was a direct result of participation in the institutes.

Average percentage of gain by participants from pre-test to post-test for state staff and general institutes.--While the results reveal that some of the institutes had considerably higher average percentages of gain than others, gain used by itself for the evaluation of the institutes is a tenuous criterion. The procedures used for selecting participants for the institutes did not provide for categorizing by professional education attainment or by professional education work experience. Therefore, it is possible for the most capable and experienced participants to be clustered in the institutes showing the lowest average percentage of gain. If this is the case, then one might assume that this group came to their respective institute better prepared and qualified than their counterparts in other institutes. Therefore, the institute that had the highest pre-test score would tend to show a lower average percentage of gain. Conversely, the greatest average percentage of gain by a given institute's participants might be caused by the grouping of participants who, by chance, were less qualified by educational background and professional work experience.

Average percentage of gain by participants from pre-test to post-test by present position classification for state staff institutes.--As a group, teacher educators had the highest average percent of gain, while local supervisors had the lowest average percent of gain. This might be explained by the fact that most of the teacher educators at this institute were from specific vocational areas other than technical education, while most of the local supervisors had broad responsibility in their jobs in several vocational-technical areas. This greater exposure to vocational-technical programming could be reflected in higher pre-test and hence lower gain scores for the local supervisors.

Summary of the average pre-test raw score (participant's self-appraisal) for general institutes.--As was true for the state staff institutes, the institute having the lowest average pre-test score had the greatest average percentage of gain.

Summary of the average post-test raw score for general institutes.--The institute with the lowest pre-test score also had the highest post-test score. Again, however, due to the existence of uncontrolled variables such as participant's age, experience, and professional education, one should not conclude that one institute was of better quality than the other.

Participant's average gain in raw score from pre-test to post-test for general institutes.--The average gain score reveals that the participants in each general institute experienced a gain of knowledge. As would be expected, the participants in the general institutes experienced a greater proportionate gain in knowledge than those in the state staff institutes. In general, the participants in the general institutes were less experienced in technical education, therefore, had more room for growth than those attending the state staff institutes.

Average percentage of gain by participants from pre-test to post-test by present position classification for general institutes.--In the general institutes local supervisors had the highest average percent of gain, while department heads or chairmen had the lowest average percent of gain. It is significant to note, however, that all groups showed a respectable average percent of gain. As was true for the state staff institutes, it is difficult to make valid explanations of the differences between groups because of the differences in the experience and background of participants in each category.

Participant's Present and Planned Activities

The following paragraphs present an interpretation of the data concerning the participant's present and planned program activities:

Average absolute change score by item from pre-test to post-test (present to planned activities score) by institute.--Analysis of data revealed that participants in each institute had an average absolute change score for each item of over 1.00. This means that for each item on a 5-point scale, the participants changed over one full unit from the pre-test to post-test (present to planned activities score). Any change from present to planned program activities was assumed to be positive change. This is an indication that the participants planned to implement positive program change as a result of the institutes. This is based on the assumption that the participant's change score on the instrument was a direct result of participation in the institutes.

Average percentage of change by participants from pre-test to post-test (present to planned activities score) by institute.--Each of the institutes experienced a respectable average percentage of change with the range being from 34.98 percent to 42.23 percent. These scores should not be used to compare the effectiveness of each institute in stimulating positive program change, since the data was highly subjective and due to the existence of uncontrolled variables such as the participant's age, experience, and professional education.

Participants' Evaluation of Institute Presentations

The results indicate that the participants were generally well pleased with the institute presentations. The presentations were evaluated on two occasions -- on Friday of the first week and on Thursday of the second week. Some participants felt it was difficult to give an average rating to all the presentations given during a week's time, and would have preferred to evaluate each presentation separately. This should be considered in the operation of future institutes.

Review of Evaluation

The Project Evaluation Meeting provided results which required no analysis of hard data as in the case of other evaluation activities; consequently, there are no interpretations of results to be presented here. The reader is referred to the Results section of this report for the outcomes of the review of the evaluation which was the purpose of the Project Evaluation Meeting.

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Conclusions

The conclusions which have been developed are presented in the following statements:

1. The consortium approach which included program planning for the institutes, instructional materials preparation, recruitment and selection of participants, and project evaluation was successful.
2. The evaluation procedures and instruments functioned successfully without distraction for each of the institutes and were effective in achieving the stated objectives of evaluation.
3. All institutes were successfully conducted and well attended.
4. The institutes provided for a geographical mix of participants which promoted a valuable exchange of information about technical education.
5. There was a cross-sectional mix of service areas, institutional classifications and professional position classifications.
6. Most participants in all institutes experienced a commendable gain in knowledge. Although there were variations in gain scores from one institute to another, one cannot conclude that one institute was better than another due to the limitations of available data.
7. Institute participants were generally well pleased with the presentations and over-all operation of the institutes.
8. There was evidence that participants planned to implement positive program change as a result of having attended the institutes.

Implications

The implications of the findings and experience of this training project for planning and conducting similar projects in the future are outlined in the following:

1. The project evaluation indicated that there is a need to determine how to identify and attract greater numbers of qualified applicants.

2. Participant comments revealed that the method of evaluating institute presentations should be reviewed and refined.

3. The project evaluation indicated that the scheduling of future institutes should avoid conflict with other professional activities that could limit participation of potential enrollees.

Recommendations

Based on the experience of the four institutes conducted in 1967 and the project evaluation, (see Method Section) the following recommendations are offered regarding the nature and need for future training projects in technical education.

1. National Program Development Institutes should be continued in 1968 based on the success of the 1967 institutes and the expanded need for leaders in technical education.

2. The consortium approach to planning and conducting national institutes for program development should be continued.

3. Leadership and program development training in technical education, supported by federal funds and national advisory services should be continued.

4. The geographical location of future institutes should provide optimum transportation accessibility.

5. Participants should be reimbursed for travel and subsistence to attract greater numbers of qualified applicants.

6. Attempts should be made to employ outstanding consultants for longer periods of time to provide for better coordination and to insure greater in-depth treatment of institute topics.

7. The institute program should be planned and organized around fewer topics so that the most critical needs of participants can be explored in depth.

8. Overhead money should be provided to the sponsoring institutions to encourage greater participation by leading centers of learning currently hampered by the present regulations.

SUMMARY

The phenomenal nationwide growth in technical education, prompted by the demand for greater numbers of technicians, has brought about an increasing need for leadership personnel in technical education. The critical need for leadership has been expressed in many professional meetings and publications. Sound and continuous program growth in technical education hinges upon both the quantity and quality of leaders in the field. The National Program Development Institutes were a refinement of a series of summer institutes designed to meet this demand to improve the leadership and program development in technical education.

Project Description

The National Program Development Institutes in Technical Education was a training project conducted as a consortium effort involving four cooperating universities (The University of California at Los Angeles, The University of Connecticut, Mississippi State University and Utah State University) and The Center for Research and Leadership Development in Vocational and Technical Education, The Ohio State University (the institution hereinafter referred to as The Center), which served as the coordinating agency. Each of the four cooperating universities sponsored a two-week institute during the summer of 1967. The two General Leadership Development Institutes held at Mississippi State University and Utah State University were designed to meet the needs of those people relatively new to positions involving responsibility for Technical Education but with potential leadership ability. The two State Staff Development Institutes held at The University of California at Los Angeles and The University of Connecticut were designed specifically to help the experienced technical education person with state-wide responsibility to better understand and fulfill his state leadership role. The Center served as the coordinating agency for designing the program, obtaining support, collecting and preparing instructional materials, recruiting and selecting participants, preparing staff, evaluating the program, writing the final report, disseminating information, and following up participants.

Purpose of the Project

The purpose of the project was to provide the resources for the development of administrative leadership and further program development at state and local levels for both experienced and inexperienced technical education personnel.

Objectives of the Project

The specific objectives of the project were as follows:

1. To provide a vehicle for the development and improvement of present and prospective leaders, relatively inexperienced

in the field of Technical Education by developing their understanding of the administrative leadership role in Technical Education, and how this role relates to long range program planning development, program implementation and evaluation, philosophy, projections, innovations, and the relationships of Technical Education to other disciplines.

2. To provide a mechanism whereby existing and potential technical education leadership personnel at the state level, relatively experienced in the field of Technical Education, will develop and improve their understanding of the administrative role of state supervisory and teacher education staff and how these roles specifically relate to program planning and evaluation, and the planned development of technical education leadership potential within their state through in-service training.

3. To provide an exemplary in-service leadership development and training program that will serve as a model for the development and implementation of similar programs at both the state and local levels, and thus develop the technical education leadership potential within the individual states.

Method

The method undertaken in planning and implementing the project is described briefly in the following paragraphs:

Meeting of leadership institutes' materials development and resource committee.--This committee assisted The Center staff in identifying and developing instructional materials and training aids needed in the institutes, and helped to structure guidelines for the curricula and operation of the institutes.

Evaluation of 1966 leadership development institutes.--The evaluation of the five institutes conducted in the summer of 1966 resulted in many helpful guidelines for the planning of the 1967 institutes.

New institutes planning committee.--The prospective directors met with Center personnel to plan for the project. It was this committee's efforts, along with the two committee's described above, that generated ideas and materials to assist The Center staff substantially in the preparation of an operational plan for the institutes.

Instructional materials.--A compilation of instructional materials generated by the 1966 institutes was reproduced for use in the 1967 institutes. Supplement I consisted of four commissioned papers, a technical education bibliography, and new and revised informational resources. Supplement II was a compilation of presentations by outstanding educators and industrialists who served as consultants for the five institutes held in 1966. The Center also commissioned for three papers to be written which made up the Compilation of Technical Education Instructional Materials for the 1967 institutes. Many other resource materials were prepared and distributed to the institutes.

Institute planning meeting.--The meeting of institute directors with The Center staff was successful in arriving at operational procedures and in pinpointing needed resources that would contribute to the success of the institutes.

Recruitment of participants.--Participants for the institutes were recruited through a centralized effort conducted by The Center. An announcement brochure, application form, and recommendation sheet were mailed to approximately 5,000 persons. As a result of the recruitment effort, which included the aforementioned mailing, announcements via articles in selected media, and presentations to national and regional conferences of vocational and technical educators, 270 applications were received by the Admissions Committee.

Selection of participants.--Since there were more than twice as many applicants as enrollment opportunities in the four institutes, a great amount of selectivity was possible. Preference was given to individuals who demonstrated leadership qualities or leadership potential and who were in a position to both benefit from the institute and also to assist with similar leadership training activities in their own states.

Development of evaluation procedures and instruments.--Procedures and instruments were prepared to comply with the evaluation objectives of the project. In addition to the participant's application form which provided considerable biographical data, the following instruments were developed:

- Participant's Self-Appraisal - State Staff Institutes.
- Participant's Self-Appraisal - General Institutes.
- Participant's Present Program Activities.
- Participant's Planned Program Activities.
- Evaluation of Presentations.
- Participant's Professional Objectives.

Final planning meeting with institute directors.--A final planning conference was held with the institute directors to review the instructional materials, the evaluation forms and procedures, and other important matters concerning the operation of the institutes.

Selection and preparation of recorder-evaluators.--The recorder-evaluators were graduate students selected by each institute director to assist with the administration of the institutes by recording activities and collecting data to be used in evaluating each institute and the project. Each recorder-evaluator was provided with explicit instructions prior to the institutes.

Operation of the institutes.--The General Leadership Development Institutes were conducted at Mississippi State University on July 10-21, 1967 and at Utah State University on July 17-28, 1967.

The State Staff Development Institutes were conducted at the University of California at Los Angeles on July 17-28, 1967 and at the University of Connecticut on July 24 - August 4, 1967.

The program of the General Leadership Development Institutes included the following major topics:

- The Leadership Role and Charge.
- The Rationale and Need for Technical Education.
- Description of the Technical Education Student.
- Administrative Structure of Technical Education Institutions.
- Program Patterns and Curriculum Development.
- Facilities and Equipment for Technical Education.
- Staffing Technical Education Programs.
- Financing Technical Education.
- Supervision and In-service Teacher Education.
- Establishing Research and Development Needs.

The program of the State Staff Development Institutes included the following major topics:

- Leadership - The Role and Responsibility.
- Current Practices and Trends in Technical Education.
- Technician Need Surveys.

- State and Local Resources for Program Support.
- Coordinating Technician Training with other Vocational Areas.
- Publicizing New Technical Programs.
- Intermediate and Long Range Program Planning.
- Staffing for Supervisory Positions.
- Evaluating Technical Education Programs, Staff and Facilities.
- Reporting Systems and Data Handling.
- Research Responsibility.

There was no prescribed order or method of presentation of the topics. This was determined by the individual institutes. Flexibility allowed maximum utilization of available speakers, consultants, resource persons, and for the scheduling of field trips. In general, formal presentations by selected specialists and consultants were followed by group discussion, small group work, and individual study. Consultants and resource persons were drawn from education, industry, and government and were used extensively in the activity of each of the institutes.

The institutes served 122 participants (114 men and 8 women) from 43 states, Puerto Rico and Canada.

Project evaluation.--The project evaluation was designed primarily to determine the participant's:

- Gain in knowledge acquired from the institute.
- Plans to utilize knowledge gained to affect positive program change.
- Satisfaction with the content, presentation and operation of the institute.

The data used in evaluating the institutes were obtained from the application form and six specifically prepared instruments. Electronic data processing equipment was used in the data reduction.

A meeting to review and interpret the project evaluation was held at The Center on October 12 and 13, 1967.

Preparation of additional instructional materials.--The Project Evaluation Committee recommended that additional instructional materials be prepared and distributed to the institute participants and staff for use in conducting future state and locally sponsored leadership development institutes in technical education. In compliance with these suggestions, the following materials were compiled:

(a) selected papers presented in the four institutes.

(b) an ERIC package presentation including transparency masters and script.

(c) a compilation of facilities layouts for vocational and technical education.

RESULTS

The results of the project evaluation and highlights of these findings are summarized in the following paragraphs:

Description of participants.--The typical institute participant was approximately 45 years of age, male, employed in a post-high school institution, had served in that capacity for approximately three years, had an average of 13 years of professional educational work experience and six years of non-educational work experience, and held the master's degree.

Participant's gain in knowledge.--The average participant in the State Staff Institutes had a gain score of 11.42 on a 25 item self appraisal instrument administered as a pre-test and post-test, and an average percentage gain of 15.22 percent.

The average participant in the General Institutes had a gain score of 46.45 on a 50 item self appraisal instrument administered as a pre-test and post-test and an average percentage gain of 33.81 percent.

Participant's present and planned activities.--The average institute participant (both General and State Staff Institutes) had an average absolute change score on a 5-point scale for each of 25 items of 1.10. Any change from present to planned program activities was assumed to be positive. The average participant's percentage of gain, by institute, from their present to planned activities score ranged from a low of 34.98 to a high of 42.23 percent.

Participant's evaluation of institute presentations.--The average perticipant's evaluation on six aspects of institute presentations was 23.31 (6 = poor and 30 = excellent).

Discussion

The project evaluation indicates that the institutes were successful in attracting qualified participants who represented a geographical mix, service area mix, and a professional position classification mix.

The institutes were planned, organized and conducted in a highly creditable manner and enjoyed good attendance. Participants achieved gains in knowledge, and there was evidence that they planned to implement positive program change as a result of the institutes. The participants were generally pleased with the presentations and overall operation of the institutes. The project evaluation revealed that the consortium approach was successful in program planning, instructional materials preparation, recruitment and selection of participants, and evaluation of the institutes. The institute directors recommended that The Center develop plans to conduct similar program development institutes in 1968.

Conclusions

The conclusions which have been developed are presented in the following statements:

- The consortium approach which included program planning for the institutes, instructional materials preparation, recruitment and selection of participants, and project evaluation was successful.
- The evaluation procedures and instruments functioned successfully without distraction for each of the institutes and were effective in achieving the stated objectives of evaluation.
- All institutes were successfully conducted and well attended.
- The institutes provided for a geographical mix of participants which promoted a valuable exchange of information about technical education.
- There was a cross-sectional mix of service area, institutional classifications and professional position classifications.
- Most participants in all institutes experienced a commendable gain in knowledge. Although there were variations in gain scores from one institute to another, one cannot conclude that one institute was better than another due to the limitations of available data.
- Institute participants were generally well pleased with the presentations and over-all operation of the institutes.
- There was evidence that participants planned to implement positive program change as a result of having attended the institutes.

Implications

The implications of the findings and experience of this training project for planning and conducting similar projects in the future are outlined in the following:

- The project evaluation indicated that there is a need to determine how to identify and attract greater numbers of qualified applicants.
- Participant comments revealed that the method of evaluating institute presentations should be reviewed and refined.
- The project evaluation indicated that the scheduling of future institutes should avoid conflict with other professional activities that could limit participation of potential enrollees.

Recommendations

Based on the experience of the four institutes conducted in 1967, the following recommendations are offered regarding the nature and need for future training projects in technical education.

- National Program Development Institutes should be continued in 1968 based on the success of the 1967 institutes and the expanded need for leaders in technical education.
- The consortium approach to planning and conducting national institutes for program development should be continued.
- Leadership and program development training in technical education, supported by federal funds and national advisory services should be continued.
- The geographical location of future institutes should provide optimum transportation accessibility.
- Participants should be reimbursed for travel and subsistence.
- Attempts should be made to employ outstanding consultants for longer periods of time to provide for better coordination and to insure greater in-depth treatment of institute topics.
- The institute program should be planned and organized around fewer topics so that the most critical needs of participants can be explored in depth.
- Overhead money should be provided to the sponsoring institutions to encourage greater participation by leading centers of learning currently hampered by the present regulations.

APPENDIX A

PARTICIPANTS

Meeting of Leadership Institutes' Materials Development and Resource Committee

September 29, 1966

Chicago, Illinois

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Vocational-Technical Education
State Board for Vocational, Technical and Adult Education
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Martin E. Leddy
State Supervisor of Technical Education
State Board for Vocational Education
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Lucian Lombardi, Director
State Technical Colleges
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The Ohio State University
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Richard G. Moe
Assistant Director of Vocational Education
State Board for Vocational Education
Olympia, Washington

Ivan E. Valentine, Consultant
The Center for Vocational and Technical Education
The Ohio State University
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AGENDA

PROJECT EVALUATION CONFERENCE

NATIONAL LEADERSHIP DEVELOPMENT INSTITUTES IN TECHNICAL EDUCATION

October 10-11, 1966

Monday, October 10

8:00 a.m.	Pick up conference participants	Staff
8:30	Welcome remarks	Robert E. Taylor
8:45	Conference activities and expectations	C. J. Cotrell
9:00	Financial arrangements	C. J. Cotrell
9:45	Break	
10:00	Review of instructional materials	I. E. Valentine
10:45	Supplemental instructional materials	I. E. Valentine
11:45	Lunch	
1:15 p.m.	Directors' evaluation of instructional activities by topic	I. E. Valentine
2:00	Topic evaluations by participants	D. L. Larimore
3:00	Break	
3:15	Participant selection and gain	I. E. Valentine
4:00	Exploration of interesting relationships	D. L. Larimore
5:00	Return conference participants to motel	Staff
6:00	Dinner	
7:30	Review of evaluation techniques	C. J. Cotrell
8:30	Review of consultants and resource persons	I. E. Valentine
9:30	Adjourn for evening	

Tuesday, October 11

8:00 a.m.	Pick up conference participants and luggage	Staff
8:30	Implications and recommendations for future institutes	A. J. Miller
10:00	Break	
10:15	Review of the structure and organization of the project and institutes	C. J. Cotrell
11:00	Follow-up of the 1966 participants	I. E. Valentine
11:30	Lunch	
1:00 p.m.	Implications for other projects	C. J. Cotrell
2:00	Conference summary	C. J. Cotrell
2:30	Adjourn	

PARTICIPANTS

Project Evaluation Meeting

October 10-11, 1966

The Center for Vocational and Technical Education
The Ohio State University

Jack Annan, Recorder-Evaluator
Department of Vocational Education
Colorado State University
Fort Collins, Colorado

H. L. Benson, Professor and Head
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APPENDIX B

NATIONAL PROGRAM DEVELOPMENT INSTITUTES IN TECHNICAL EDUCATION

LIST OF INSTRUCTIONAL MATERIALS

PRINTED MATERIALS

* 1. Center for Vocational and Technical Education. Compilation of Technical Education Materials. Columbus, Ohio: Ohio State University, 1966. (Out of print.)

* 2. ______________. Compilation of Technical Education Materials, Supplement I. Columbus, Ohio: Ohio State University, 1967.

* 3. ______________. Compilation of Technical Education Materials, Supplement II. Columbus, Ohio: Ohio State University, 1967.

* 4. ______________. Review and Synthesis of Research in Technical Education. Columbus, Ohio: Ohio State University, 1967.

5. Manufacturing Chemists' Association. A Bright Future for You as a Chemical Technician. Washington, D. C.: The Author, 1966.

6. Ogg, Elizabeth. Mental Health Jobs Today and Tomorrow. Public Affairs Pamphlet No. 384. Public Affairs Committee, Inc. in cooperation with The National Institute of Mental Health, 1966.

7. Sun Life Assurance Company of Canada. Technical Education May Be For You. Chicago, Illinois: (no date)

* 8. U. S. Department of Health, Education, and Welfare, Office of Education. Basic Planning Guide for Vocational and Technical Education Facilities. Special Publication No. 11. GPO, 1965.

9. ______________. Chemical Technology. Technical Education Program Series No. 5. GPO, 1964.

10. ______________. Civil Technology, Highway and Structural Options. Technical Education Program Series No. 8. GPO, 1966.

* 11. ______________. Division of Vocational and Technical Education. Criteria for Technician Education, A Suggested Guide (Draft). GPO, 1966.

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* Materials provided for participants as well as staff.

12. ______________. Educating Disadvantaged Children in the Middle Grades. GPO, 1965.

13. ______________. Electrical Technology. Area Vocational Education Program Series No. 1. GPO, 1960.

14. ______________. Electronic Technology. Area Vocational Education Program Series No. 2. GPO, 1960.

15. ______________. Equality of Educational Opportunity. GPO, 1966.

16. ______________. Instrumentation Technology. Technical Education Program Series No. 6. GPO, 1964.

17. ______________. Mechanical Technology, Design and Production. Technical Education Program Series No. 3. GPO, 1962.

* 18. ______________. Division of Vocational and Technical Education. Pretechnical Post High School Programs, A Suggested Guide (Draft). GPO, 1966.

* 19. ______________. Program Evaluation and Review Technique. Cooperative Research Monograph No. 17. GPO, 1966.

20. ______________. The Youth We Haven't Served. GPO, 1966.

AUDIO-VISUAL AIDS

21. Center for Vocational and Technical Education. "Technical Education Transparencies." Columbus, Ohio: Ohio State University. (32 transparencies).

22. Connecticut State Bureau of Technical Institutes. "Technicians for Tomorrow." (Filmstrip).

23. Ohio Board of Education, Division of Vocational Education, Guidance and Testing. "Vocational and Technical Education for a Changing World of Work." (Filmstrip.)

24. ______________. "Your Future Through Vocational Education." (Filmstrip.)

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* Materials provided for participants as well as staff

APPENDIX C

Participant
Number___________

NATIONAL PROGRAM DEVELOPMENT INSTITUTES IN TECHNICAL EDUCATION

PARTICIPANT'S SELF-APPRAISAL
STATE STAFF INSTITUTE

DIRECTIONS: Please appraise what you feel is your present knowledge of the following technical education topics. Circle the number which indicates your degree of present knowledge.

	Very Little Knowledge (1)	Little Knowledge (2)	Some Knowledge (3)	Much Knowledge (4)	Very Highly Knowledgeable (5)
Current Practices and Trends in Technical Education					
1. Administrative patterns at the state level.	1	2	3	4	5
2. Administrative patterns at the local level.	1	2	3	4	5
3. Current problems in the states and regions.	1	2	3	4	5
Methods for Determining Technical Program Needs					
4. The mechanics of surveys.	1	2	3	4	5
5. Determining technician manpower needs.	1	2	3	4	5
6. Utilization of available needs data.	1	2	3	4	5
Intermediate and Long-Range Planning					
7. Determining priorities.	1	2	3	4	5
8. Utilization of PERT in planning.	1	2	3	4	5
9. Projecting budgetary needs.	1	2	3	4	5
10. Projecting staff needs.	1	2	3	4	5

	(1) Very Little Knowledge	(2) Little Knowledge	(3) Some Knowledge	(4) Much Knowledge	(5) Very Highly Knowledgeable
Staffing					
11. Staff recruiting	1	2	3	4	5
12. In-service training for administrative staff.	1	2	3	4	5
13. In-service training for teaching staff.	1	2	3	4	5
Evaluation					
14. Evaluating teaching staff.	1	2	3	4	5
15. Evaluating administrative staff.	1	2	3	4	5
16. Evaluating curricula.	1	2	3	4	5
Facilities and Equipment for Technical Education Programs					
17. Educational specifications.	1	2	3	4	5
18. Equipment requirements.	1	2	3	4	5
19. Building sites.	1	2	3	4	5
20. Utilization of facilities.	1	2	3	4	5
Research					
21. Methods of involving state staff in research.	1	2	3	4	5
22. Utilization of available research findings.	1	2	3	4	5
Technical Programs for Groups with Special Needs					
23. Pre-technical program patterns.	1	2	3	4	5
24. Ancillary services and community resources related to training programs for disadvantaged groups.	1	2	3	4	5
25. Special teacher preparation needs.	1	2	3	4	5

Participant
Number____________

NATIONAL PROGRAM DEVELOPMENT INSTITUTES IN TECHNICAL EDUCATION

PARTICIPANT'S SELF-APPRAISAL
GENERAL INSTITUTE

DIRECTIONS: Please appraise what you feel is your present knowledge of the technical education topics listed below. Circle the number which indicates your degree of present knowledge.

	Very Little Knowledge (1)	Little Knowledge (2)	Some Knowledge (3)	Much Knowledge (4)	Very Highly Knowledgeable (5)
Rationale and Need for Technical Education					
1. Present and future demand for technicians.	1	2	3	4	5
2. Technician placement patterns.	1	2	3	4	5
3. New and emerging areas of technician employment.	1	2	3	4	5
4. Size of current technical school enrollments.	1	2	3	4	5
5. Economic and social needs for technician education.	1	2	3	4	5
Role of Technicians					
6. Various levels of technical training.	1	2	3	4	5
7. Fields of the "work world" in which technicians are employed.	1	2	3	4	5
8. The place of the technician in the occupational spectrum.	1	2	3	4	5
9. Difference between the "professional" and the technician.	1	2	3	4	5
10. The difference between the technician and the skilled employee.	1	2	3	4	5

Administrative Structure of Technical Education Institutions

		(1) Very Little Knowledge	(2) Little Knowledge	(3) Some Knowledge	(4) Much Knowledge	(5) Very Highly Knowledgeable
11.	The development and operation of statewide plans for technical education.	1	2	3	4	5
12.	The relation of individual institutions to state master plans.	1	2	3	4	5
13.	The federal, state, and local relationships for technical education.	1	2	3	4	5
14.	Different organizational structures of local programs of technical education.	1	2	3	4	5
15.	Accreditation procedures for technical education	1	2	3	4	5

Description of the Technical Education Student

		(1) Very Little Knowledge	(2) Little Knowledge	(3) Some Knowledge	(4) Much Knowledge	(5) Very Highly Knowledgeable
16.	Program variations necessary with different student age levels.	1	2	3	4	5
17.	Selection criteria for technical education students.	1	2	3	4	5
18.	Sources of students for technical education.	1	2	3	4	5
19.	Means of determining the number of potential students.	1	2	3	4	5
20.	Desirable recruiting practices.	1	2	3	4	5

Program Patterns and Curriculum Development

		(1) Very Little Knowledge	(2) Little Knowledge	(3) Some Knowledge	(4) Much Knowledge	(5) Very Highly Knowledgeable
21.	Interrelationships of laboratory and shop courses with science and mathematics.	1	2	3	4	5
22.	The use of advisory committees in planning technical programs.	1	2	3	4	5
23.	The cluster approach in curriculum development.	1	2	3	4	5

		(1) Very Little Knowledge	(2) Little Knowledge	(3) Some Knowledge	(4) Much Knowledge	(5) Very Highly Knowledgeable
24.	Curricula for the various offerings in technical education.	1	2	3	4	5
25.	Steps in curriculum development through occupational analysis.	1	2	3	4	5
Facilities and Equipment for Technical Education Programs						
26.	Educational specifications.	1	2	3	4	5
27.	Building sites for technical education programs.	1	2	3	4	5
28.	Equipment requirements for various technical education programs.	1	2	3	4	5
29.	Modern media used in instructional programs.	1	2	3	4	5
30.	Role of school staff in planning facilities and equipment.	1	2	3	4	5
Financing Technical Education Programs						
31.	Capital outlay for site, buildings, and equipment.	1	2	3	4	5
32.	Cost per student per year.	1	2	3	4	5
33.	Financing patterns.	1	2	3	4	5
34.	Annual operating costs.	1	2	3	4	5
35.	Personnel costs.	1	2	3	4	5
Staffing Technical Education Programs						
36.	Necessary qualifications of instructional staff.	1	2	3	4	5

	(1) Very Little Knowledge	(2) Little Knowledge	(3) Some Knowledge	(4) Much Knowledge	(5) Very Highly Knowledgeable
37. Necessary qualifications of supervisory personnel.	1	2	3	4	5
38. Various sources of personnel.	1	2	3	4	5
39. Teacher recruitment procedures.	1	2	3	4	5
40. Teacher selection criteria.	1	2	3	4	5
Technical Education Supervision and Teacher Education					
41. Evaluation.	1	2	3	4	5
42. Curriculum improvement.	1	2	3	4	5
43. Certification of technical education teachers and supervisors.	1	2	3	4	5
44. Programs for developing teaching skills.	1	2	3	4	5
45. Programs for upgrading technical competence of instructors.	1	2	3	4	5
Programs for Groups with Special Needs					
46. Special requirements for teachers.	1	2	3	4	5
47. Characteristics of socio-economically handicapped.	1	2	3	4	5
48. Ancillary services and community resources available for programs for the disadvantaged.	1	2	3	4	5
Research					
49. Current research activities in technical education.	1	2	3	4	5
50. Administration of research activities.	1	2	3	4	5

Participant
Number__________

NATIONAL PROGRAM DEVELOPMENT INSTITUTES IN TECHNICAL EDUCATION

PARTICIPANT'S PRESENT PROGRAM ACTIVITIES

DIRECTIONS: Please indicate to what extent you are presently involved in the following activities:

	(1) Very Low Extent (or not at all)	(2) Low Extent	(3) Average Extent	(4) High Extent	(5) Very High Extent
1. Revising and improving present curricula.	1	2	3	4	5
2. Planning, developing, and initiating new technical (or related) curricula.	1	2	3	4	5
3. Implementing in-service teacher training or leadership activities.	1	2	3	4	5
4. Evaluating present programs.	1	2	3	4	5
5. Coordinating state or local technical education activities.	1	2	3	4	5
6. Implementing a public relations program.	1	2	3	4	5
7. Developing a master plan for vocational and/or technical education.	1	2	3	4	5
8. Conducting research and/or development activities.	1	2	3	4	5
9. Developing curriculum materials and instructional media.	1	2	3	4	5
10. Planning and/or developing an area vocational school, technical institute, or community college.	1	2	3	4	5
11. Developing leadership training programs.	1	2	3	4	5
12. Revising the state plan for vocational-technical education.	1	2	3	4	5
13. Revising the present technical teacher education program.	1	2	3	4	5
14. Implementing a new technical teacher education program.	1	2	3	4	5

	Very Low Extent (or not at all) (1)	Low Extent (2)	Average Extent (3)	High Extent (4)	Very High Extent (5)
15. Conducting manpower needs surveys.	1	2	3	4	5
16. Using advisory committees and groups.	1	2	3	4	5
17. Using PERT techniques in planning.	1	2	3	4	5
18. Advising and counseling students	1	2	3	4	5
19. Recruiting additional faculty.	1	2	3	4	5
20. Recruiting students.	1	2	3	4	5

Participant
Number____________

NATIONAL PROGRAM DEVELOPMENT INSTITUTES IN TECHNICAL EDUCATION

PARTICIPANT'S PLANNED PROGRAM ACTIVITIES

DIRECTIONS: Please indicate to what extent you are planning to make any changes in your present program activities, as listed below, as a result of your attending this institute.

		Very Low Extent (or not at all) (1)	Low Extent (2)	Average Extent (3)	High Extent (4)	Very High Extent (5)
1.	Revising and improving present curricula.	1	2	3	4	5
2.	Planning, developing, and initiating new technical (or related) curricula.	1	2	3	4	5
3.	Implementing in-service teacher training or leadership activities.	1	2	3	4	5
4.	Evaluating present programs.	1	2	3	4	5
5.	Coordinating state or local technical education activities.	1	2	3	4	5
6.	Implementing a public relations program.	1	2	3	4	5
7.	Developing a master plan for vocational and/or technical education.	1	2	3	4	5
8.	Conducting research and/or development activities.	1	2	3	4	5
9.	Developing curriculum materials and instructional media.	1	2	3	4	5
10.	Planning and/or developing an area vocational school, technical institute, or community college.	1	2	3	4	5
11.	Developing leadership training programs.	1	2	3	4	5
12.	Revising the state plan for vocational-technical education.	1	2	3	4	5

	(1) Very Low Extent (or not at all)	(2) Low Extent	(3) Average Extent	(4) High Extent	(5) Very High Extent
13. Revising the present technical teacher education program.	1	2	3	4	5
14. Implementing a new technical teacher education program.	1	2	3	4	5
15. Conducting manpower needs surveys.	1	2	3	4	5
16. Using advisory committees and groups.	1	2	3	4	5
17. Using PERT techniques in planning.	1	2	3	4	5
18. Advising and counseling students.	1	2	3	4	5
19. Recruiting additional faculty	1	2	3	4	5
20. Recruiting students.	1	2	3	4	5

Week Number________

Participant
Number______________

NATIONAL PROGRAM DEVELOPMENT INSTITUTES IN TECHNICAL EDUCATION

EVALUATION OF PRESENTATIONS

DIRECTIONS: Indicate on the five point scale below your opinion of the following aspects of the institute. Circling 1 indicates a rating of "poor," and circling 5 indicates a rating of "excellent."

	Poor				Excellent
1. Quality of presentations	1	2	3	4	5
2. Content of presentations	1	2	3	4	5
3. New concepts gained	1	2	3	4	5
4. Quality of instructional materials	1	2	3	4	5
5. Discussion opportunities	1	2	3	4	5
6. Variety of topics covered	1	2	3	4	5

Comments:____

____

____

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____

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Participant
Number__________

NATIONAL PROGRAM DEVELOPMENT INSTITUTES
IN TECHNICAL EDUCATION

PARTICIPANT'S PROFESSIONAL OBJECTIVES

My present position is that of (check one):

________Teacher

________Department Head or Chairman

________Teacher Educator

________Researcher

________Local Director

________Local Supervisor

________State Supervisory Position

________Administrator in Post-High School Position

________Other (Please indicate)______________________________

DIRECTIONS: Please indicate your immediate and long-range professional objectives below by circling the responses only where they are applicable.

Professional Objectives:	Immediate Objectives (Within next 2 years) (1)	Long-Range Objectives (2)
1. To continue to do my best in my present position.	1	2
2. To become an outstanding teacher.	1	2
3. To work on an advanced degree.	1	2
4. To finish my present assignment and move to a more challenging position.	1	2
5. To improve technical education programs in my present position.	1	2
6. To plan and develop new technical education programs	1	2

		(1) Immediate Objectives (Within next 2 years)	(2) Long-Range Objectives
7.	To move to a larger and more responsible position	1	2
8.	To become a department head or chairman.	1	2
9.	To develop technical education cooperative progams with industry.	1	2
10.	To become a local supervisor.	1	2
11.	To become an administrator in a technical division of a technical institute or community college.	1	2
12.	To become a state supervisor.	1	2
13.	To become a teacher educator at a college or university.	1	2
14.	To work in a research position.	1	2
15.	To develop in-service training programs for state or local staff.	1	2
16.	To move into a top-level state administrative position.	1	2
17.	To develop new or improved technical education facilities.	1	2
18.	To work actively toward legislative change in my state that will allow better technical education.	1	2
19.	To become the top administrator in a technical institute or a collegiate institution.	1	2
20.	To help develop and advance technical education in foreign countries.	1	2
21.	Other (please describe): ______________________ ______________________________ ______________________________	1	2

APPENDIX D

NATIONAL PROGRAM DEVELOPMENT INSTITUTES
IN TECHNICAL EDUCATION

RECORDER-EVALUATOR INSTRUCTIONS

Duties of the Recorder

1. Keep a record of participant attendance.

2. Collect two copies of any teaching aids (papers, charts, booklets etc.) distributed to participants. One copy of the collected materials should be sent to The Center, and one copy should be retained as institute copy.

3. Keep a record of items that come up in discussion which should be treated at some time during the institute. Discuss these items with the institute director.

4. Arrange to have pictures made of participants and staff at the institute.

5. It is the responsibility of the recorder-evaluator to submit a summary of each presentation as prepared or approved by the presenter. In addition, the recorder-evaluator should include a copy of the complete presentation when one is available. The following information should be included in the summary:

   a. Title of presentation.

   b. Presenter's full name, title, and address.

   c. Date of presentation.

   If any important work or document is cited in the original paper, it is necessary to indicate in the summary of the presentation, the complete title of document, source, and author.

6. Prepare the final report for the institute according to the established format and send it to The Center in duplicate by September 1, 1967.

Duties of the Evaluator

1. Distribute and collect all evaluation instruments.

2. Give the participants instructions on how to complete each evaluation instrument.

3. Tabulate results of the participants' evaluations of presentations (Form 03-White copy) for use by institute director.

Schedule and Procedures for the Evaluator

1. Obtain a roster of participants and assign a code number for each participant. Prepare a 3 x 5 card with the participant's name on one side and his personal code number on the reverse side. The following code numbers are assigned to the various institutes:

California	600
Connecticut	700
Mississippi	800
Utah	900

   A roster of participants with the proper code numbers must accompany the materials sent to The Center.

2. Introduction. During the first morning of the institute, the institute director should introduce the idea of evaluation, comment on the need for it, and clarify its purpose.

3. Give each participant the card with his name and personal code number. Request that he keep the card and record his number on each evaluation form completed during the institute.

4. Pre-Test (Participant's Self-Appraisal). Form 01-S for the State Institutes and Form 01-G for the General Institutes should be administered and collected Monday morning of the first week. This procedure should be followed:

   a. Distribute instruments and IBM answer cards.

   b. Request each participant to write his code number in the space for "student number" on the front of the IBM answer card. The number "1" should be written in the space for "sequence number."

   c. Read the directions to participants and clarify any questions. Participants will not write on the Self-Appraisal form. Their answers should be placed on the IBM answer cards.

   d. Administer test.

   e. Collect the completed cards and test forms. Check that each card has a participant code number and that there are no omissions or duplications of numbers recorded in the code range assigned.

5. Participant's Present Program Activities. Form 02 should also be administered and collected Monday morning of the first week. This procedure should be followed:

    a. Distribute the instruments and IBM answer cards.

    b. Request each participant to write his code number in the space for "student number" on the front of the IBM answer card. The number "1" should also be written in the space for "sequence number."

    c. Read the directions to participants and clarify any questions. Participants will not write on the Present Program Activities form. Answers should be placed on IBM answer cards.

    d. Administer Form 02.

    e. Collect the completed cards and test forms. Check each card for code number and for omissions and duplications.

6. Evaluation of Presentations. Administer and collect presentation evaluations (Form 03) on Friday of the first week and Thursday of the second week. Use this procedure:

    a. Distribute instruments to participants and institute staff. (White copy for participants, yellow copy for staff.)

    b. Request that participants put their code numbers in the upper right hand corner of the page and indicate first or second week in the upper left hand corner.

    c. Read the directions to participants, suggest that participants make comments in the space provided and clarify any questions about the form.

    d. Administer Form 03.

    e. Collect completed instruments. Check to see that each has a code number and that the week is identified.

7. Participant's Planned Program Activities. Administer and collect Participant's Planned Program Activities (Form 04) on Thursday of the last week. This is the procedure to follow:

    a. Distribute the instruments and IBM cards.

    b. Ask participants to write code number in the space for "student number" on the front of the IBM answer card. The number "2" should be written in the space for "sequence number."

c. Read the directions to the participants and clarify any questions. Participants will not write on the form. The answers should be placed on the IBM answer cards.

d. Administer Form 04.

e. Collect the completed cards and test forms. Check for code numbers, omissions, and duplications.

8. Participant's Professional Objectives. Administer and collect this form (05) on Thursday of the last week. The procedure to be followed is:

   a. Distribute the instruments.

   b. Ask the participants to put their code number in the upper right hand corner. Also ask them to indicate their present position title in the space provided.

   c. Read the directions to the participants and clarify any questions.

   d. Administer Form 05.

   e. Collect completed instruments and check for code numbers.

9. Post-Test (Participant's Self-Appraisal). Form 01-S for State Institutes and 01-G for General Institutes should be administered and collected on Thursday of the last week. Use the following procedure:

   a. Distribute instruments and IBM answer cards.

   b. Request each participant to write his code number in the space for "student number" on the front of the IBM answer card. The number "2" should be written in the space for "sequence number."

   c. Read the directions to participants and clarify any questions. Participants should not write on the Self-Appraisal form. Their answers should be placed on the IBM answer cards.

   d. Administer test.

   e. Collect the completed cards and test forms. Check that each card has a participant code number and that there are no omissions or duplications of numbers recorded in the code range assigned.

10. All evaluation instruments and cards should be sent to The Center at the close of the institutes. The IBM cards should be assembled in individual packets according to the instrument to which they apply. The individual packets should then be labeled as "Pre-Test," "Post-Test," Participant's Present Program Activities," and "Participant's Planned Program Activities." The evaluation instruments should be packaged sequentially (participant number) by each instrument.

APPENDIX E

Topical Outline - General Leadership Development Institute

I. The Leadership Role and Charge

  A. The campus

  B. The Institute program

  C. The role and responsibility of leaders

  D. The initial evaluation (pre-test)

II. The Rationale and Need for Technical Education

  A. Studies and surveys

    1. Labor market trends

      a. Local
      b. State
      c. National
      d. International

    2. Population growth trends

      a. General
      b. School
      c. Mobility
      d. Immigration

    3. Changes in occupations

    4. Changes in sources of technicians

    5. Changes in school attendance

    6. Assessment of present and future needs

    7. The rate of change in technology

    8. Technician placement studies

    9. Social, economic, and psychological need of the individual for training and employment.

    10. The employers need for technicians

    11. The shift in educational emphasis from doing to thinking to feeling

III. Description of the Technical Education Student

- A. Economic need of individuals
- B. Persons who can profit from technical education
- C. Programs to meet needs of various age groups
- D. Criteria for selecting students
- E. Sources of students

IV. Administrative Structure of Technical Education Institutions

- A. State-wide patterns
- B. Public Schools
  - 1. Community colleges
  - 2. Technical institutes
  - 3. Area schools
  - 4. Four-year colleges
- C. Private schools
- D. Military services
- E. Other governmental agencies
- F. Correspondence schools

V. Program Patterns and Curriculum Development

- A. Flexibility
- B. Diversity
- C. Broad cluster training approach to curricula
- D. Comprehensiveness
- E. Continuous re-examination of purpose
- F. Continuing change of program with new knowledge
- G. Community oriented program
- H. Exploiting community resources
- I. Student appeal

- J. Response to the needs of people
- K. Anticipation of future needs
    - 1. New products
    - 2. New processes
- L. Continuing education

VI. Facilities and Equipment for Technical Education Programs

- A. The site
    - 1. Using advisory committees
    - 2. Selection
    - 3. Location
- B. Building
    - 1. Type of construction
    - 2. Design
- C. Equipment
    - 1. Comparable to industry
- D. Provision for modern teaching
- E. Illumination
- F. Development of laboratories
    - 1. Time required
    - 2. Planning
- G. Conference facilities
- H. Library
- I. Cafeteria
- J. Supplies
- K. Anticipatory planning

VII. Staffing Technical Education Programs

- A. Types of personnel

        1. Technical teachers
        2. Mathematics and science teachers
        3. General education teachers
        4. Auxiliary course teachers
        5. Librarians
        6. Supervisors
        7. Administrators
    B. Qualifications for each type of staff member
    C. Functions of administrators and supervisors
    D. Sources of supply for staff
        1. Recruitment
        2. Selection

VIII. Financing Technical Education Programs

    A. Capital outlay
        1. Plant
        2. Equipment
        3. Sites
            a. Free sites
            b. Selected sites
    B. Operating costs
        1. Personnel services
        2. Overhead
    C. Comparative costs
        1. Cost per student per year
        2. Justification for costs
        3. Room utilization
    D. Financing patterns

IX. Supervision and In-Service Teacher Education

A. Personnel services

B. Effective use of facilities

C. Curriculum improvement

D. Effective techniques of evaluation

E. Accreditation

X. Establishing Research and Development Needs

A. The role of research and development

B. Utilization of research in administration of technical education

C. Identification of critical research and development problems

Topical Outline - State Staff Development Institute

I. Leadership - The Role and Responsibility

   A. The campus and its facilities

   B. The Institute program

      1. Philosophy of technical education

      2. Rationale and need

      3. Program content

   C. The State leadership role

   D. Institute evaluation plans

II. Current Practices and Trends in Technical Education

   A. Current problems in the various states and regions

   B. Current administrative patterns for technical programs

      1. State patterns

      2. Local patterns

III. Technician Need Surveys

   A. Determining existing occupational needs

   B. Projecting for future needs

   C. Determining existing and potential student populations

   D. Utilization of available data

      1. Bureau of labor statistics data

      2. Industry data

   E. Determination of sources of technicians in training

   F. The mechanics of surveys

      1. Sources of survey expertise

IV. State and Local Resources for Program Support

   A. Use of industrial and professional advisory committees

        1. State advisory groups
        2. Local advisory groups
        3. Composition of resource groups
        4. Responsibilities of resource groups
    B. Professional organizations
    C. Civic organizations
    D. Legislative and political support

V. Coordinating Technician Training with other Vocational Areas
    A. Engineering technology
    B. Health related technologies
    C. Para-medical technologies
    D. Biological science technologies
    E. Agricultural related technologies
    F. Business and office related technologies
    G. Technical occupations relating to home economics skills

VI. Publicizing Technical Programs
    A. Industry support and resources
    B. Resources of state institutions
    C. Local institutional resources
    D. Maximum use of available communications media

VII. Intermediate and Long Range Program Planning
    A. Determination of priorities
    B. Determination of needed facilities
    C. Projected financial needs
    D. Projected staff needs
    E. Interstate planning and cooperative programs

VIII. Staffing for Supervisory Positions

    A. Identification of staff

    B. Staff recruiting

    C. Qualifications and certification

    D. In-service training for staff

        1. Teaching

        2. Administrative

IX. Evaluating Technical Education Programs, Staff and Facilities

    A. Implications of Federal acts concerning evaluation

    B. Curriculum

        1. Standards and criteria

        2. Present technologies

        3. Implications for emerging technologies

    C. Sources of input for evaluation criteria

        1. Advisory committees

        2. Accrediting agencies

        3. Graduate feedback

        4. Self-study

    D. Facilities

        1. Equipment

        2. Library

        3. Student facilities

        4. Utilization of facilities

    E. Counseling and Placement

        1. Guidance

        2. Recruitment

        3. Drop-out ratios

        - 4. Placement methods
        - 5. Graduate follow-up
    - F. Staff Evaluation Instruments
        - 1. Teachers
        - 2. Administrators
        - 3. Professional responsibilities
- X. Reporting Systems and Data Handling
    - A. Methods of reporting data
    - B. Types of data
    - C. Sources of data
- XI. Research Responsibility
    - A. Research involvement as a function of the state staff
    - B. Research involvement at the local level

APPENDIX F

THE UNIVERSITY OF CALIFORNIA AT LOS ANGELES
INSTITUTE PROGRAM

Sunday, July 16		Fireside Lounge
3:00 - 6:00 p.m.	Registration - Reception Social Hour	
Host:		Richard S. Nelson
Monday, July 17		South Recreation Room
9:00 - 10:00 a.m.	Greetings	David F. Jackey M. Catherine Welsh Richard S. Nelson William Borsari
	Conference Plan of Operation	David Allen Richard L. Lano John M. Meyer
10:00 - 10:20 a.m.	Coffee Break	
10:20 - 11:00 a.m.	Institute Evaluation	Richard L. Lano
11:00 - 12:00 noon	Interchange of Practices	J. Lyman Goldsmith
12:00 - 1:30 p.m.	Lunch	
1:30 - 3:00 p.m.	Symposium-Current Practices and Trends in Technical Education	Sidney McGaw Franklin Johnson Chester Gromachi John Owens Lee Ralston-Moderator
3:00 - 3:20 p.m.	Coffee Break	
3:20 - 5:00 p.m.	Data Reading	Bruce Hanchett
Tuesday, July 18		South Recreation Room
9:00 -10:00 a.m	Anatomy of a Group	Lee Ralston
10:00 -10:20 a.m.	Coffee Break	
10:20 -12:00 noon	Technician Need Surveys	Milo Johnson
12:00 - 1:30 p.m.	Lunch	
1:30 - 2:30 p.m.	Leadership - The Role and Responsibility	Don Wilson

2:30 - 3:00 p.m.	Introduction to Simulation	David Allen
3:00 - 3:20 p.m.	Coffee Break	
3:20 - 5:00 p.m.	First Simulation Activity	Staff[1]
Wednesday, July 19		South Recreation Room
9:00 -10:00 a.m.	Presentation before the Board	Francis Laird
10:00 -10:20 a.m.	Coffee Break	
10:20 -12:00 noon	State and Local Resources for Program Support	Archie Breslan
12:00 - 1:30 p.m.	Lunch	
1:30 - 3:00 p.m.	Coordinating Technical Training with other Vocational Areas	William G. Loomis
3:00 - 3:20 p.m.	Coffee Break	
3:20 - 3:45 p.m.	Simulation Howgozit	David Allen
3:45 - 5:00 p.m.	Second Simulation Activity, Part A	Staff
6:00 p.m. -	Barbecue	
Thursday, July 20		South Recreation Room
9:00 -10:00 a.m.	Evaluating Technical Education Programs	Wallace T. Homitz
10:00 - 3:00 p.m.	Field Trip to Industry	Air Research Rocketdyne
3:00 - 3:20 p.m.	Coffee Break	
3:20 - 4:00 p.m.	Discussion - Impressions of Visit	David Jackey
4:00 5:00 p.m.	Second Simulation Activity, Part B	Staff
Friday, July 21		South Recreation Room
9:00 -10:00 a.m.	Professional Organizations	C. Thomas Dean

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[1] Rooms for Simulation Activities will be assigned.

10:00 - 10:20 a.m.	Coffee Break	
10:20 - 12:00 noon	Staffing for Supervisory Positions and Staff Evaluation Instruments	Al Jochen
12:00 - 1:30 p.m.	Lunch	
1:30 - 3:00 p.m.	Reporting Systems and Data Handling	C. A. Wacker
3:00 - 3:20 p.m.	Coffee Break	
3:20 - 5:00 p.m.	Management Engineering - PERT and FIRM (Pt. 1)	Pete Tulenko
Monday, July 24		South Recreation Room
9:00 - 10:00 a.m.	Implications of Federal Acts Concerning Evaluation	Melvin L. Barlow
10:00 - 10:20 a.m.	Coffee Break	
10:20 - 12:00 noon	Evaluation of Students, Counseling, and Placement Services	John Buller
12:00 - 1:30 p.m.	Buffet Lunch	
1:30 - 3:00 p.m.	Evaluation Criteria	Irvin Colt
3:00 - 3:20 p.m.	Coffee Break	
3:20 - 5:00 p.m.	Management Engineering - PERT and FIRM (Pt. 2)	Pete Tulenko
Tuesday, July 25		South Recreation Room
9:00 -10:00 a.m.	Sample Public Relations Films	Ted Elmgren
10:00 -10:20 a.m.	Coffee Break	
10:20 -12:00 noon	Public Relations	F. Parker Wilber
12:00 - 1:30 p.m.	Lunch	
1:30 - 3:00 p.m.	Facilities	Michael Russo (Fireside Lounge)
3:00 - 3:20 p.m.	Coffee Break	

3:20 - 3:45 p.m.	Simulation Howgozit	David Allen
3:45 - 5:00	Third Simulation Activity, Part A	Staff
Wednesday, July 26		South Recreation Room
9:00 -10:00 a.m.	Newspaper Interviews	Dick Turpin
10:00 -10:20	Coffee Break	
10:20 - 3:00 p.m.	Visit Junior Colleges	Los Angeles Trade-Technical College El Camino College
3:00 - 3:20	Coffee Break	
3:20 - 4:00	Discussion - Impression of Visit	David Jackey
4:00 - 5:00	Third Simulation Activity, Part B	Staff
6:00	Steak Dinner	
Thursday, July 27		South Recreation Room
9:00 -10:00 a.m.	Research	George Ebey
10:00 -10:20	Coffee Break	
10:20 -11:10	Long Range Planning	Mack Stoker
11:10 -12:00 noon	Philosophical Point of View	J. Lyman Goldsmith
12:00 - 1:30 p.m.	Lunch	
1:30 - 2:30	New Leadership Role of the Office of Education	Graham Sullivan (Royce Hall Auditorium)
2:45 - 3:00	Simulation Howgozit	David Allen
3:00 - 3:20	Coffee Break	
3:20 - 5:00	Fourth Simulation Activity	Staff
Friday, July 28		
9:00 - 9:45 a.m.	Report to the Board Regarding Future Plans	David Jackey
9:45 -10:00	Simulation Howgozit	David Allen
10:00 -10:20	Coffee Break	
10:20 -11:30	Cameron School District Reports Back	Cameron School District Personnel
11:30 -12:00 noon	Last Evaluation and Falling-Out Ceremonies	Richard Nelson David Jackey

THE UNIVERSITY OF CONNECTICUT
INSTITUTE PROGRAM

Monday, July 24

8:00 a.m.	General Orientation	Staff
9:00	Current Practices and Trends in Technical Education	Richard W. Howes
10:00	Group Picture	
11:00	Role and Responsibility of Leadership	John W. Struck
12:00 noon	Lunch	
1:30 p.m.	Role and Responsibility of Leadership (continued)	John W. Struck Richard W. Howes
	Group Discussions	

Tuesday, July 25

8:30 a.m.	Program Planning Evaluation and Program Planning in Technical Education	W. Howard Martin
9:15	Program Planning-Technical Education	Robert M. Knoebel
	Group Discussions	
12:00 noon	Lunch	
1:30 p.m.	Program Planning - The American Association of Junior Colleges	Lewis J. Fibel
2:30	Simulation in Training of Administrators	Raymond Stinchfield

Wednesday, July 26

9:00 a.m.	Program Planning - Research in Technical Education	Herbert Righthand
	Group Discussions	
12:00 noon	Lunch	
1:30 p.m.	Program Planning - Technician Need Survey	Herbert Righthand

2:30 p.m.	Videotape in Education	Thomas Goodkind

Thursday, July 27

9:00 a.m.	Program Planning-Technical Teacher Education (continued)	Jerry Dobrovolny
	Group Discussions	
12:00 noon	Lunch	
1:30 p.m.	Field Trip - Thames Valley State Technical College Norwich, Connecticut	Donald Welter

Friday, July 28

9:00 a.m.	Program Planning-Staffing for Vocational and Technical Education	John Beaumont
10:30	Group Discussions	
12:00 noon	Lunch	
1:30 p.m.	Evaluation	Staff
2:30	Program Planning and New Instructional Media	Clarence Calder
	Group Discussions	

Monday, July 31

9:00 a.m.	Resources for Program Support (Federal Programs)	John Edwards
	Group Discussions	
12:00 noon	Lunch	
1:30 p.m.	Resources for Program Support (Advisory Committees)	Joseph Murphy
	Group Discussions	

Tuesday, August 1

9:00 a.m.	Evaluating Technical Education	Lucian Lombardi
	Group Discussions	
12:00 noon	Lunch	

1:30 p.m.	Evaluating Technical Education (continued)	Lucian Lombardi

Wednesday, August 2

8:30 a.m.	Information Retrieval and its Implications for Technical Education	Ivan Valentine
9:00	Promoting and Publicizing Technical Education	William Streib
11:00	Field Trip - Springfield Technical Institute	Edmund Garvey Teresina Thompson

Thursday, August 3

9:00 a.m.	Evaluation of Vocational Education	Joseph Nerden
11:30	Evaluation	Staff
12:15 p.m.	Lunch	
2:30	Field Trip - United Aircraft Research Laboratories, East Hartford, Connecticut	
5:30	Dinner - Tobacco Valley Inn, Windsor	

Friday, August 4

8:00 a.m.	Group and Individual Reports of Plans	Participants
10:30	Evaluation of Institute	Staff
12:00 noon	Lunch	
1:30 p.m.	Preparation of Final Report Individual Conferences as Scheduled	

MISSISSIPPI STATE UNIVERSITY
INSTITUTE PROGRAM

Monday, July 10

8:45 a.m.	Welcome	John K. Bettersworth
	Orientation	E. B. Moore, Jr.
9:30	Coffee Break	
10:00	Presentation - Technical Education	Ray Karnes
11:00	The Institute Recorder and Plan of Procedure	James C. Hilyer, Jr.
12:00 noon	Lunch	
1:00 p.m.	Presentation - Leadership in Education	Willis A. LaVire
2:30	Coffee Break	
3:00	Group Discussions	
4:00	Group Reports	
4:30	Adjourn	

Tuesday, July 11

8:30 a.m.	Presentation - Rationale and Need for Technical Education	Edwin L. Kurth
10:00	Coffee Break	
10:30	Discussion	Edwin L. Kurth
12:00 noon	Lunch	
1:00 p.m.	Group Discussions	
2:30	Coffee Break	
3:00	Group Reports	
4:30	Adjourn	
7:30	Interest Group Discussions	

Wednesday, July 12

8:30 a.m.	Presentation - The Technical Student	Donald S. Phillips
10:00	Coffee Break	
10:30	Discussion	Donald S. Phillips
12:00 noon	Lunch	
1:00 p.m.	Presentation - A Method of Training Teachers of Technical Subjects	Harold J. Morris
2:30	Coffee Break	
3:00	Presentation - Research as a Leadership Tool	James E. Wall
4:30	Adjourn	
7:30	Interest Group Discussions	

Thursday, July 13

8:30 a.m.	Presentation - Program Patterns and Curriculum Development	Walter J. Brooking
10:00	Coffee Break	
10:30	Discussion	Walter J. Brooking
12:00 noon	Lunch	
1:00 p.m.	Group Discussions	
2:30	Coffee Break	
3:00	Presentation - The Role of a Curriculum Laboratory in Support of Vocational and Technical Education	Robert Sartin
4:00	Presentation - User View of Electronics Curriculum	R. J. Vasek
5:00	Adjourn	
7:30	Interest Group Discussions	

Friday, July 14

8:30 a.m.	Presentation - New Programs in Occupational Education	K. G. Skaggs

10:00 a.m.	Coffee Break	
10:30	Discussion	K. G. Skaggs
12:00 noon	Lunch	
1:00 p.m.	Presentation - Programs for the Culturally and Educationally Deprived	Johnnie R. Clarke Walter Washington
2:30	Coffee Break	
3:00	Discussion	Johnnie R. Clarke Granville P. Diffie Walter Washington
4:30	Adjourn	
Monday, July 17		
8:30 a.m.	Presentation - Design Solution for Technical Education Facilities	George Mehallis
10:00	Coffee Break	
10:30	Discussion	George Mehallis
12:00 noon	Lunch	
1:00 p.m.	Group Discussions	
2:30	Coffee Break	
3:00	Group Reports	
4:30	Adjourn	
7:30	Interest Group Discussions	
Tuesday, July 18		
8:30 a.m.	Presentation - Staffing Programs of Technical Education	Joseph T. Nerden
10:00	Coffee Break	
10:30	Discussion	Joseph T. Nerden
12:00 noon	Lunch	

1:00 p.m.	Group Discussion	
2:30	Coffee Break	
3:00	Presentation - Community Power Structure and Educational Programs	E. B. Moore, Jr.
4:30	Adjourn	
7:30	Interest Group Discussions	

Wednesday, July 19

8:30 a.m.	Presentation - Financing Technical Education	Joseph T. Nerden
10:00	Coffee Break	
10:30	Discussion	Joseph T. Nerden
12:00 noon	Lunch	
1:00 p.m.	Group Discussion	
2:30	Coffee Break	
3:00	Presentation - Project Evaluation and Review Technique	Max Hailey
4:30	Adjourn	

Thursday, July 20

8:30 a.m.	Presentation - Supervision and In-Service Teacher Education	Edwin L. Kurth
10:00	Coffee Break	
10:30	Presentation - New Programs in Technical Teacher Education	Edwin L. Kurth
12:00 noon	Lunch	
1:00 p.m.	Presentation - Administrative Structure for Technical Education	Gerald B. James
2:30	Coffee Break	
3:00	Discussion	Gerald B. James
4:30	Adjourn	

Friday, July 21

8:00 a.m.	Presentation - Overview of Presentation on Research in Technical Education	J. Paschal Twyman
9:30	Presentation - The Center for Research and Leadership Development in Vocational and Technical Education and Educational Resource Information Center	Kenney E. Gray
11:00	Closing Exercise - Address by -	M. M. Hawkins
	Presentation of Certificates	John K. Bettersworth

UTAH STATE UNIVERSITY
INSTITUTE PROGRAM

Monday, July 17

8:00 a.m.	Introductions - Orientation, Registration	Neill C. Slack
9:00	Pre-Testing	Dennis A. Dirksen
9:45	Refreshment Break	
10:15	Welcoming Remarks	Milton R. Merrill
10:30	Presentation - Leadership Role and Change	Robert D. Gates
12:00 noon	Lunch	
1:00 p.m.	Group Discussion - Leadership Role and Change	Robert D. Gates
2:00	Film - Future in Your Hands - Utah Technical College at Salt Lake City	
2:30	Refreshment Break	
3:00	Presentation - Rationale and Need for Technical Education	C. Thomas Dean

Tuesday, July 18

8:30 a.m.	Presentation - Rationale and Need for Technical Education	C. Thomas Dean
10:00	Refreshment Break	
10:30	Group Picture	
10:45	Group Discussion - Rationale and Need for Technical Education	C. Thomas Dean
12:00 noon	Lunch	
1:00 p.m.	Presentation - Administrative Structure of Technical Education Institutions	Richard H. Hansen
2:30	Refreshment Break	
3:00	Group Discussion - Administrative Structure of Technical Education Institutions	Richard H. Hansen
7:00	Steak Fry	

Wednesday, July 19

8:30 a.m.	Presentation - The Technical Education Student	John F. VanDerslice
10:00	Refreshment Break	
10:30	Group Discussion - The Technical Education Student	John F. VanDerslice
12:00 noon	Lunch	
1:00 p.m.	Presentation - Staffing Technical Education Programs	Howard B. Gundersen
2:30	Refreshment Break	
3:00	Group Discussion - Staffing Technical Education Programs	Howard B. Gundersen
4:00	Film - Technicians for Tomorrow - Connecticut Staff Bureau of Technical Institutes	Howard B. Gundersen
7:00	The Clinic	

Thursday, July 20

8:30 a.m.	Presentation - Staffing Technical Education Programs	Howard B. Gundersen
10:00	Refreshment Break	
10:30	Panel Discussion - Staffing Technical Education Programs	
12:00 noon	Lunch	
1:00 p.m.	Presentation - Establishing Research and Development Needs	Austin G. Loveless
2:30	Refreshment Break	
3:00	Group Discussion - Research and Development Needs	Austin G. Loveless
4:30	Tour - Utah State University Engineering Facilities	

Friday, July 21

6:30 a.m.	Field Trip - Kennecott Copper Corporation, Litton Industries Utah Technical College at Salt Lake City	

Saturday, July 22

8:30 a.m.	Presentation - Curriculum Development	Kenneth C. Farrer
10:00	Refreshment Break	
10:30	Discussion - Curriculum Development	Kenneth C. Farrer

Monday, July 24

8:30 a.m.	Presentation - Program Patterns and Curriculum Development	Lynn A. Emerson
10:00	Refreshment Break	
10:30	Presentation - Program Patterns and Curriculum Development	Lynn A. Emerson
12:00	Lunch	
1:00 p.m.	Presentation - Accreditation of Technical Education Schools and Curriculums	William E. Mortimer
2:30	Refreshment Break	
3:00	Presentation - Program Patterns and Curriculum Development	Lynn A. Emerson

Tuesday, July 25

8:30 a.m.	Presentation - Program Patterns and Curriculum Development	Lynn A. Emerson
10:00	Refreshment Break	
10:15	Presentation - The Center for Vocational and Technical Education and ERIC	Aaron J. Miller
10:30	Discussion - Curriculum Development	Lynn A. Emerson
12:00 noon	Lunch	
1:00 p.m.	Presentation - Supervision and In-Service Teacher Education	Howard A. Matthews
2:30	Refreshment Break	
3:00	Discussion - Teacher Education	Howard A. Matthews
4:30	Presentation - Educational Planning - PERT	Austin G. Loveless

Wednesday, July 26

8:30 a.m.	Presentation - Supervision and In-Service Teacher Education	Howard A. Matthews
10:00	Refreshment Break	
10:30	Discussion - Teacher Education	Howard A. Matthews
12:00 noon	Lunch	
1:00 p.m.	Presentation - Financing Technical Education	Joseph T. Nerden
2:30	Refreshment Break	
3:00	Discussion - Financing Technical Education	Joseph T. Nerden
7:00	Presentation - The Role of the Consultant and - The Pittsburg Plan	A. Maurice Capson

Thursday, July 27

8:30 a.m.	Presentation - Financing Technical Education	Joseph T. Nerden
10:00	Refreshment Break	
10:30	Discussion - Financing Technical Education	Joseph T. Nerden
12:00 noon	Lunch	
1:00 p.m.	Post Testing	Dennis A. Dirksen
1:45	Presentation - Implementation of State Technical Services Act	Harlan L. Scherer
2:30	Refreshment Break	
3:00	Presentation - Facilities and Equipment for Technical Education	Milton E. Larson
7:00	Discussion - Facilities and Equipment	Milton E. Larson

Friday, July 28

8:30 a.m.	Presentation - Facilities and Equipment for Technical Education	Milton E. Larson
10:00	Refreshment Break	
10:30	Travel Form	
10:45	Closing Exercises - Presentation of Certificates	Dean F. Peterson

APPENDIX G

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APPENDIX I

AGENDA

PROJECT EVALUATION CONFERENCE

NATIONAL PROGRAM DEVELOPMENT INSTITUTES IN TECHNICAL EDUCATION

October 12-13, 1967

Thursday, October 12

7:30 p.m.	Welcome Remarks	Robert E. Taylor
7:45	Conference activities and expectations	Aaron J. Miller
8:00	Review financial arrangements	Aaron J. Miller
8:45-9:30	Review of Instructional Material	Ivan E. Valentine

Friday, October 13

8:00 a.m.	Pick up conference participants	Staff
8:30	Supplemental Instructional Material	Ivan E. Valentine
9:15	Review of Evaluation Techniques	Ivan E. Valentine
10:00	Break	
10:15	Review of consultants and resource persons	Aaron J. Miller
11:00	Exploration of data analysis	Don R. Herring and Ivan E. Valentine
11:40	Lunch	
1:15 p.m.	Participant selection	Aaron J. Miller
1:45	Participant follow-up	Ivan E. Valentine
2:15	Director's report on Institute	Institute Director
3:15	Break	
3:30	Implications of the structure and organization of the project and institute. Implications for future projects	Aaron J. Miller
4:15	Conference summary	Aaron J. Miller
4:30	Adjourn	

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Project Evaluation Meeting

October 12-13, 1967

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